HAPPY NEW YEAR to Everyone!!!

What a season we are having! Practically the earliest opening on record and extremely successful Sugar-Fest, featuring Consumer Demos and the Sugar’s 17th Annual Adult Preseason Ski Clinic. We hosted some world’s most prominent skiers and skaters, like Diann Roffe, Krista Schmidinger, Keely Kelleher, Paul Wylie, and the list goes on. Way to go Sugar!

After New Year’s, and then Martin Luther King, Jr. on January 17, we will be able to concentrate on our personal skiing and riding. I hope you all will participate in one of PSIA-E offered events this season. We will host some of them right here at Sugar Mtn. on March 7 – 8. Look at the Event Schedule on www.psia-e.org, for all the details and many special deals and promotions.
I encourage you all to contribute to the publication of *Peak Performance*. Please, write me at

Kosmalaw@bellsouth.net.

Remember that all previous issues of *Peak Performance* are posted and downloadable from my Web page found at

www.mathsci.appstate.edu/~wak/.

Yes, yes, I know that Mammoth Mountain, CA (my home away from home), in December 2010 has been named by ski-info.com for having the most snow of any ski resort in the world, with the base of 11 – 17 feet of snow. But, more does not necessarily mean better. We sure have it good here at Sugar Mtn. And this will be a grand season. Good luck with all your New Year’s resolutions. May they last you longer than a week or a month. Personally, I am working on resolutions that I made several years ago. I suppose better late than never. I hope 2011 will be the best year you ever had.

**Education**

Back to Basics

By PSIA-E Dev Team members:

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During November Dev Team training we explored several classic exercises and drills that help skiers build fundamental skills. These exercises have long been in the instructors’ toolbox. The challenge created was to relate what can seem to be senseless drills into contemporary movements in actual skiing. While researching hop turns and leapers we had to define the technical elements, and key performance cues, and why these two drills will lead to improved skier performance.

**Hop turns** are an intense exercise even for the most adept skiers, and proper stance and balancing movements are essential to execute this drill. The skier executes this drill with their skis across the fall line while maintaining a quiet upper body aligned over the feet. The ankles and knees are flexed deeply and extend explosively to launch of the snow. While in the air the legs and feet are twisted and the skis are pivoted around the axis of the body. The landing should be soft. The ankles and knees should be allowed to flex deeply and smoothly as the ski come in contact with the snow.

The performance cues are as follows:

- Only a small hop is required
- Spring off the both feet and land on both skis with soft ankles
- The upper body moves forward and down the hill (this increases with pitch)
- The skis rotate fully through 180º
- Minimal gliding after landing is observed
- There is a deliberate pole touch
- There is a smooth rhythm and cadence
- The center of mass stays over feet
- The core stabilizes the body
- The primary effort is from the thighs
How do hop turns integrate into contemporary skiing? Obviously they encourage a centered stance and an increased awareness of balancing movements. Equal weight distribution over the entire length of the ski and a consistent stance width, appropriate for individual body types (particularly hip width), have a positive effect during the take off. Finally, landing on both skis with an equal amount of edging promotes the fine tuning of edging and pressure management skills.

**Leapers** incorporate all the basic movement patterns of skiing and are appropriate for developing the mechanics of medium to long radius turns. The turn is initiated while traversing. The skier hops vertically and while in the air, steers the skis slightly downhill and toward the next turn. Landing should be soft on the new set of edges. Timing for the leaper is such that full extension is reached at the transition between turns which promotes edge change at turn initiation.

The performance cues are as follows:

- Only a small leap is required
- An equal width between the skis is maintained while on the snow and in the air
- While in the air the skis are slightly rotated
- Both skis land on the snow simultaneously
- Guidance (steering) continues upon landing
- The body moves forward and down the hill (fore-diagonal move)
- There is a deliberate pole touch
- There is a smooth rhythm and cadence
- The center of mass stays over the feet

Leapers and hop turns both promote similar movements. However, leapers require less rotary movement, are somewhat less intense, and have different timing and duration of movements.

By exploring these simple exercises we have found commonalities between proper execution of the drill and actual skiing. Both leapers and hop turns integrate well into contemporary skiing movements. They underline a very important aspect of modern skiing: “sameness.” Sameness means: equal pressure and edging on both skis combined with an equal stance width. By perfecting both of these simple drills we can bring their core elements, and the aspects of good skiing they encourage, into our skiing.

Agnieszka Wusatowska-Sarnek, who let’s us call her Aga for short, is no longer a stranger in our circle. Many of us talk about her, her articles, and their meanings, as well as about her perfect skiing. Aga, thank you for this article and for sharing your knowledge. We will take to heart what you and your colleagues Keith and William say, and will practice the skills.

**Bumps Without Bumps**

*By Gordon Carr*

*PSIA-E Alpine, Level II*

This will not be a discussion about high-level mogul skiing and boarding. There are books and articles in our PSIA/ AASI member magazine, 32 Degrees, which offer insights into and technical instruction about proficient performance in the mogul fields. (Plus a very quiet… I couldn’t do a high level article; I’m not that good myself.) But it has seemed to me that most of those articles and book chapters presume basic mogul competence and/or assume you have mogul runs available to learn on. We have wonderfully groomed trails here at Sugar Mountain and great terrain. Plus, and this is no small thing, Sugar has an absolutely first class learning area! The Magic Carpet area is sweet and Easy Street, with its own chair, is an ideal first “next step” for beginner skiers and boarders. But, what we don’t have is a mogul trail, a bumped up, ungroomed monster of natural snow, where the snow snakes writhe and move from day to day, shape shifting from relatively soft, puffy marshmallows one day to ferocious ice cliffs the next! So, how do we provide our guests (and ourselves) with the initial skills necessary to venture into the bumpy and begin to ENJOY the challenge of mogul skiing?

First, the fundamental skills and mechanics of modern skiing and snowboarding are not different in moguls than on
groomed corduroy. Surprise! Surprise! The solid mastery of the muscle movements underlying modern dynamic skiing and boarding gets the job done. So each day you practice and improve your fundamentals on groomed snow takes you one step closer to mogul proficiency and enjoyment. Bumps are not like solid glare blue ice, unpredictably breakable crust, or frozen chicken heads where survival is the goal. Mogul skiing and boarding can be FUN! There are however some skill blending moves and tactics uniquely appropriate for handling moguls, which may seem counterintuitive. And, these skills can be developed on groomed trails. Perhaps this article will give you some ideas about drills to practice for yourself and use to instruct your guests if they ask about learning bump skiing or riding. (Here it goes again, boarders… I know from nothing about snowboarding in bumps, but I think some of these practice drills will apply—you decide.)

So, briefly, tactics first. Forget about “turn shopping”! Just like with ice, turn or die! There are no good bumps to seek out for turns; they are all pretty much occurring in a pattern not natural to your usual turns and are all equally nasty. Turn or die; medium radius turns, while you shop, allows—even encourages—your body to move out of “counter.” Also the secret to the rhythm of mogul skiing is THERE IS NO RHYTHM. Pretty much you are going to have to adapt to a sequence of turns that is unlike your typical pattern of turning on groomed terrain. No turn shopping and be prepared for an unusual non-pattern of turning.

But now on with the first clue about skiing bumpyies… they wouldn’t be so spooky if they just came at you slower; if only you could make a turn, think about the next line, the next bump, and then make the turn etc. turn after turn. So forget already about looking like the freestylers in the Olympics. They aren’t mortals! Come on! Head and eyes absolutely level and quiet as their legs from the hip socket down are doing the Charleston in perfect tandem at frantic speeds which probably would scare the bibs off me on groomed snow!! And then air time and flips! We mortals aren’t there! But they make 4 points of relevance for this article: a.) forget about trying the bumps AT THAT KIND OF SPEED initially. I was once told, “Do everything you know how to do to SLOW the pace down when you first venture into moguls; b.) they ski in a very narrow stance with boots and knees seemingly glued together; c.) the Olympic Freestylers’ turning pattern is independent from their body length. These pros turn equally precisely and rapidly whether they are extending to full height or flexing with their knees almost up their nose!; and, d.) they demonstrate masterful upper/lower body separation critical for survival on a steep tight mogul line.

So separation of turning from body height is the second skill you have to develop (the first is SLOW DOWN, remember?; more about this later), and this can be practiced on groomed terrain. Figure 1 at right (try not be distracted by the exquisite abstract art representation of the human bean) shows the head and eyes of an ideal skier being held stable in the bumps while the knees, hips, spine, etc. do all the flexing and extending and rotating to accommodate to the moguls. Sometimes you have to be turning from an extremely flexed position and other times you have to redirect the skis while extended at your full length. This can feel weird, to say the least, at first, and if you try the below described exercise, you will experience how strange it actually feels. Most of us get into a movement habit pattern when making turns. We typically initiate a turn from a somewhat flexed position during the crossover, begin to extend and get long and strong during the shaping phase or “belly” of the turn, and then again start flexing as the completion phase of one turn develops into the crossover initiating the next turn. So if we don’t have bumps to practice on to develop a new turning movement pattern and the feet and skis stay on a relatively smooth line down a groomed slope, we have to create artificially the flexing and extending of the ankle, knee, hip, and spine joints. We can disconnect turning from body length on groomed terrain by making our upper body short, medium, long, short, long, medium etc. randomly while making fairly short radius turns on groomed green or easy blue terrain (see Figure2 at right; try again to remain undistracted by the modern art). If practicing by yourself, you’ll have to choose the “random” body length. But it is more fun and realistic when this drill is skied with others while “circle skiing” (aka ladder skiing.) The colleagues you pass yell out what body height you should assume on the next turn. This sort of re-creates the irregular, non-pattern of a mogul trail, where you must unexpectedly turn where the moguls dictate, not in a rhythmic pattern familiar to you.

Third, to ski moguls well, you must narrow your typical stance width. Ideally, you
want both skis to encounter, as much as possible, the same part of the mogul at the same time. A wide stance can put your skis (and YOU) way out of kilter when one ski is on top of a mogul and one is already off the side in the trough! Altering stance width is easy on groomed terrain; you simply must deliberately ski a very wide then very narrow and then your normal stance width, alternating between them. You could just practice a very narrow stance, but what the hey, while you’re at this stance gig, you might as well throw in the extra wide track so that you become comfortable skiing ANY stance width if tactics or circumstances demand.

Fourth, you must, absolutely must, develop the muscle movements to keep your upper body facing down slope no matter what your skis, feet, legs, and hip joints are doing! If you let your downhill shoulder and arm and pole come across the fall line and point to the trees, you will be in for some surprises! Keep the pole always reaching down the fall line for the next bump. Good groomed terrain drills to polish this skill are: a.) linked hockey stops with pole plant; and, b.) pivot slips. Remember, linked hockey stops are LINKED with the skis pointed down the fall line briefly before going to the next hockey stop to the other side. When doing linked pivot slips, the skis are always side slipping down the fall line, just very quickly pivoting to alternate sides. You should stay within as narrow a corridor as possible when doing these drills to promote balancing over your whole foot. If we were all young and perfectly flexible in our hip sockets, when doing these drills our pelvis, trunk, shoulders, hands all would be perpendicular to the fall line at all times and only the legs (from the hip sockets down) would be twisting. Also when you complete the hockey stops if you had a quarter in each hand and just let them go, the quarters would fall between the tips and tails of your skis respectively. Solid hockey stop and pivot slip skills also serve as an excellent way to slow the pace down! Test yourself some time on these drills… they are difficult to perform well.

Fifth, learn to turn a FLAT ski with a strong reliance on muscle movements in the legs, ankles, and feet to produce rotary forces. Groomed terrain is perfect for this… I suggest green terrain, this isn’t easy and you’ll probably fall once or twice. You have to let your ankles be “soft”; the feel is the exact opposite of doing “railroad tracks” (which is ALL edging and NO rotary movements.) Let your skis go out from under your body as in dynamic skiing, but do this at slow speed. See how far out from under you can let the skis go and STILL turn them, while flat, with leg and foot rotational movements, back under your body to complete the turn. We are not allowed to say this to guests, but I’ve attended PSIA mogul events when we would unbuckle the top boot cuff buckles and loosen the bottom ones and try to do this drill. Very instructive (and humbling)! The reason for this drill is you mostly don’t have to worry about edging the skis with muscle movements; the shape of the moguls provide more than enough edge holding by the shape of the mogul on the backside. If you also rely on “edging” to initiate your turns you can unexpectedly “rail” your skis and get “edge lock” and then look out for some more surprises!

Sixth, on groomed terrain, master the “Curly Footed Shuffle” and other shuffling movements which promote “centering”. What is that? Well, you play some Tango music on your MP3 and … oops, I got diverted. On a mellow, groomed slope, push one ski forward and one ski back further under your body alternately and continually throughout all the medium radius turns of a run. Also you can scootch both your feet out in front of you, then pull them exaggeratedly back under your body and scooch them out exaggeratedly in front and then back under your body throughout a long series of medium radius turns. Now, instead of pushing your feet and skis out in front and back under, let your skis seem to stay centered under you and move your upper body forward and then lean back repeatedly during a series of turns. What is this all about? Well, as your skis travel up the front side or shoulder of a mogul, that sudden up shift in slope angle wants to throw you into the “backseat”! You have to DO things to keep your skis centered under your body, and having the ability to move your feet and skis and/or center of mass fore and aft relative to and sort of independent from your skis’ forward movement is critical. The Curly Footed Shuffle and the variants thereof described above help you stay light on the snow and not be glued in a static position a skill necessary for an enjoyable moment of glory in the moguls.

These are just a few very basic drills on groomed snow which add to our fundamental snow sport muscle movements, and ones which will prepare our guests (and yourself) for the bumpyies. But ultimately it is just like what I said about skiing ice in the Ice is Nice article in the March 2010 of Peak Performance. There just comes a time when you have to get out there and get beat up a little by the snow snakes. Hopefully practicing these drills first will give you a bit of a head start and minimize the humble pie you’ll have to eat. This article is about the basics; if you want the real skinny and high level tips and instruction, seek out our Level III guys, Len, ZT, Witold, and Doug M. And NO, despite many requests, there is NO truth to the rumor that I will be doing an article devoted exclusively to water color and pencil drawings of skiers and boarders flowing down the trails at Sugar Mountain…uhm…well, it might be a good charity auction gig…NO, NO!!

STAY SAFE AND HAVE FUN
Help is Only a Question or Click Away

By Justin Grimes

To be the best, most professional snowsports instructors, trainers and coaches at all levels work on their personal skills and teaching progressions regularly, if not constantly, striving to reach peak performance and understanding.

Methodologies of teaching snowsports abound. A progression that may work perfectly for student X may not be best for student Z so it’s important to have as many tips in our quiver of knowledge as possible. In addition to our mountain’s collective extraordinary experience which we all can mine, many good resources are only a click of your computer mouse away. Below is a short list to get you started.

For years, I have enjoyed reading and participating in the Epic Ski forum. It’s my number one resource. It’s simple to join and it’s free. Give it a click: http://www.epicski.com/. Go to the forums and read a little. Submit a question or make a personal observation, you may find yourself having an online conversation with one of the notoriously great ski/board aficionados like Weems Westfeldt – Weems is a PSIA Examiner & Clinic Leader (Rocky Mountain) and a past member of the prestigious PSIA Alpine Demonstration Team. He currently leads the Diamond Sessions program of the Ski & Snowboard Schools of Aspen. Or with Bob Barne – Bob is a PSIA Examiner & Clinic Leader (Rocky Mountain) and is the Director of Training at the Ski & Ride School at Keystone Resort; or a conversation with a host of other accomplished experts. Also, the site is an excellent springboard to other sites and videos of snowsports.

To view a concise video of a ski warm-up, click to Dynamic Warmup for Skiing by Elsbeth Vaino:


While you are there, browse around on Jonathan Lawson’s site, he’s a Rocky Mountain Trainer who I really appreciate.

Or why not click to Sportkool: http://www.sportskool.com/videos/bode-miller-getting-started and view a video about skiing the crud with the man, Bode Miller.

You got the idea; improve your understanding, vocabulary and skills of snowsports from the comfort of your computer. Knowledge is a beautiful thing.

Justin, ski instructor at Sugar Mtn., is the former Director of Snowsports at Hawksnest Resort and former Director of Skiing at Appalachian Ski Mountain. He comes from a lifetime’s work in the professional theatre; currently, he is a freelance journalist. You can follow Justin’s column and news digest, The Global Village, in the Avery Journal Times.

Teaching Tips

Short Swing

By Witold Kosmala
PSIA-E Alpine, Level III

and

by Andrzej Kosmala
Full European Certification
PSIA Alpine Level III equivalent
Mammoth Mtn., California

Ivica Kostelić, Croatian Alpine Ski Racer performing a short swing turn.

Purpose

This type of a turn will bring you great versatility in skiing. It will enable you to ski steeper and narrower slopes, perfect to use in steep chutes. You can use them on a flatter terrain to show your dynamics in short radius turns straight down
the fall line. These turns will exhibit your expert ability to edge and pressure your skis, as well as turn them on a dime. These turns will take your dynamic skiing to the next level.

Short swing is simply a series of rhythmic linked short turns where the upper body faces directly downhill. The skis stay in a very narrow corridor of 2 – 3 meters and sharply turn from side to side to control the speed, as the body flows straight down the fall line. Shoulders should stay square to the fall line, hands forward and weight on the balls of your feet. Basically, short swing turns are rounded up, smooth hop turns. Do not confuse these turns with short radius dynamic turns, sometimes referred to as “reaching,” where the upper body crosses the fall line by at least one meter.

Short swing turns unite the “old school” with the “new school” of skiing. Before the era of shaped skis in the 1990s, most recreational skiers skied somewhat with the technique that we will describe in this chapter. This involved big counter-rotation, popping up to unwind and turn, making definite checks (setting the platform), and performing aggressive steering with the feet. As you have observed in reading this manual, all these skills are still used when skiing on new shaped skis with all sorts of rockers, but their blend is normally more gentle, less abrupt. However, in the short swing all the moves are fast and will seem rugged until perfected. There is nothing more beautiful than seeing an expert skier flowing down a steep fall line performing very smooth but extremely dynamic short swing turns. If you argue with this, then you do not have skier’s blood flowing through your veins.

**Balance**

Balance is taken to its extreme. Once you are in the fall line, and then almost instantly in the transition. Body flows at a constant speed, but skis are whipping under you very quickly from side to side. If you don’t think this requires fantastic dynamic balance, then we don’t know what does.

Since the dynamics are great and forces strong, most weight needs to be balanced on the outside leg. Since the slope is likely steep, it is imperative that the skier is on front of the skis exhibiting a strong contact with the cuffs of the boots. It is helpful to think that the body needs to stay ahead of the skis, pretending that the tails are feather light. It is not unlikely that the tails of the skis will leave the snow right at the beginning of the turn, but they smear the surface in a circular arc instead of being pivoted in the air. Short swing turns are not hop turns. It is not recommended for the whole ski to ever leave the snow, as this creates an abrupt landing in which the skier may dig in deeper into the slope’s surface than desired. That can create too sudden stop of the lower body while the upper is still moving. A head into the snow down the hill may be the result.

Since the slope is likely steep, the skier’s stance should be a little narrower than normal. This way both skis will perform more similar actions. The same goes for skiing in powder or in a mogul field. Skier’s legs should be flexed in the transition. Steeper the slope, more flexed they should be. Then, reaching to the next transition down the hill will be that much closer. The outside leg will be longer than the inside leg.

**Edging**

In order to fight the gravity caused by steep terrain and other strong forces, skier needs to use high edges and strong counter rotation to prevent loosing their body to the outside of the turn. In the transition skier should be looking straight down the hill with skis sharply edged up the hill to prevent slippage. Upon quick edge release, which can happen before the transition, skis should change to the new edges well before they reach the fall line. This way they can start scraping the snow early for speed control.

Remember that edging begins with your toes and moves up the body. Just because hips are countered, it does not mean that edges are engaged to all of their capacity. Also, since the skier’s position is very countered, their hips are rotated about 45 degrees toward the down hill, so the uphill ski has a lead over the downhill ski. The ski lead is definite. On steep terrain the uphill leg is bend much more than the down hill leg.

**Pressure**

Oh yes, pressure. Now, that comes and goes within a blink of an eye. In the transition your skis are pressured to the snow the most. (This may happen before the transition for faster, more dynamic skiers.) As the platform is formed, sometimes called a “check,” almost all of the pressure is in the middle of the skis. This is when legs push toward the snow as the rest of the body moves up and down the fall line. As the new turn begins, the pressure is released, called
“unweighting.” Here there may be a small move back of the skis, or just a hesitation in the movement of the skis, which places the skier well on the front of the skis. Using ankles’ dorsiflexion, pressure goes to the tips of the skis as the skier pressures boot cuffs, and then progressively moves to the balls of the feet. Sometimes it goes even more toward the tails, which will give a stronger rebound (if the skis have a spring in the tails.)

Then, the transition is reached when most pressure is exhibited on the skis. Possibly just a touch more pressure is on the tails of the skis as they arrive in the transition. But, as soon as the skis are popped, more pressure goes to the tip than the tails. It is possible that the tails leave the snow and just smear its surface as they drive toward the fall line.

There is more pressure on the outside ski then the inside ski. The percentages vary depending on the dynamics, terrain, speed, snow conditions, etc.

**Rotary Movements**

There are a lot of rotary movements in short swing. They are extensive and need to be performed accurately in just the right times. Due to extensive counter rotation, rotary movements of the upper body go in opposite directions to those in the lower body. Your upper body should not follow your skis and should not cross the fall line.

Let’s start talking about what happens in the transition after several turns. (We are saying “after several turns” so that the skier is in a dynamic flow of the task.) The skier is facing straight down the hill with their head and shoulders. Hips are not turned down the hill as much, since they are half way down to the skis from the head. Skis are at right angle to the fall line. Skier is flexed, in a strong athletic position. The skier feels like they are wound up, twisted like a popsicle stick. Just any second and they are going to pop. In fact, that is exactly what needs to happen.

As soon as the legs are straightened, skis make a rebound platform and the upper body moves upward but down the hill. (Looking at the skier, their head should NOT bounce up since the skier skis down more than the head goes up.) As the lower body with less mass seeks the alignment with the upper body, a definite turning motion occurs in the lower body. This rotary motion turns the skis into the fall line. Releasing the pressure exhibited in the transition, the skis automatically seek the fall line — the path down of least resistance. Skis like that line. Did you notice that run away skis always go straight down the hill, unless other obstacles alter their way, like skis’ break system?

After the fall line is reached, the skier actively turns their skis to the other side of the slope as they sink down and start winding up their body for the next check in the transition. This winding up is done by core and thigh muscles. Speed is controlled in big part by the amount of rotation that the skis make. Sometimes even more than 180 degree turn is needed to keep a desired speed. Just make sure that the hips do not follow the skis. They need to be strongly countered. No rotation in the shoulders. Weak hips will turn too much and make the skier spin out. It is no fun to suddenly start going backwards on your steep and narrow slope.

Since the turns are much sharper than the skis’ “turn radius,” there is a lot of skidding going on. There are several types of skidding in the short swing turns.

1. The skis’ path is very wide between the transition points as the tails are far away from the path that tips take.
2. If there is enough pressure exhibited on the skis’ shovels, the skis will bend more and create a narrower skidded path. This is when the skis are on higher edges and dynamics are higher.
3. The pivoting point is right under the balls of the skier’s feet. This is on blue slopes when speed control is easier to attain. This leaves tracks more uniform to both sides of the line that the feet took.
4. The pivoting is half way between the boots and the shovels. This occurs on steep terrain when more of the ski needs to scrape the snow to hold the skier from unwanted acceleration down the slope; like in narrow shoots, for example. Here a path is wide and skier moves sideways from one side of the fall line to the other, even though the shoulders and head point directly down the hill. In those situations it is not uncommon to see tails go off the snow and shovels bend more than normal. Remember, there is more stopping power when ¾ of a ski scrapes the snow than only the portion behind the ski boots (tails.)

**Pole Plant**

That’s right, pole plant and not a pole touch. In short swing poles are used for the necessary rhythm. When on blue ter-
rain, their touch is much gentler than on the steep terrain, where we call the pole plant to be “blocking.” Pole plant occurs in the transition as the body sinks down. The basket of the pole should be planted well down the slope as to not get in the way of the skis as they are released after the check. Your wrist needs to be cocked up as you plant the pole, as if you were to fire a pistol. Then, your arm should stay with the planted pole as your upper body flows “over” it. Don’t put the pistol into the pretend holster. Hold it in front of your body so you will not need to lift your arm for the planting of the pole when its turn comes again.

The pole action helps with timing and balancing. The pole plant marks the moment when the wound-up muscular tension of the skier is released, sending the skier down the fall line and turns the skis down the hill.

**Anticipation**

We cannot have this chapter without mentioning the anticipation. The anticipation is when the body is in the transition under torsion. The shoulders, head and upper body faces down the fall line and is ready for the turn, and the lower body is winding up to the very last possible moment. All the abdominal muscles are under torsion and ready to release.

**Terrain**

Learning of the short swing should start on gentle terrain. There are many things one can learn on flats that will translate to steeps. Like anything else, try learning it when you are not intimidated by dangers to your body. Granted, dynamics cannot be as vivid on a green slope as on a black diamond, but movements can be isolated and improved one by one when fear is not present. Then, you can try putting things together as need be. Look into lesson progressions for terrain selection.

**Skills to Practice**

As all the skiing concepts? are always present, (edging, pressure and rotary movements) all surrounded by dynamic balance, try to perform drills in which a particular skill is dominant in order to improve that skill. Below are some ideas.

1. **Edging**
   - Stand across the hill and have someone standing below you try to pull you down the hill by grabbing the baskets of your poles. Try resisting.
   - Side stepping
   - Side slipping
   - Side slip to a stop
   - Falling Leaf
   - Traverses leaving clean tracks
   - Straight run to wedge
   - Hockey stops
   - Skating (on flats and down the hill)
   - Skating to short turn
   - Garlands concentrating on the starting of a turn
   - Garlands concentrating on the ending of a turn
   - Long Leg /Short Leg
   - Hop turns
   - 1000 steps
   - Leapers
   - Long turns with multiple edge sets
   - Linked turns on one leg
2. Pressure

- Side stepping
- Traverse on uphill ski
- Traverse while lifting one ski and then the other as sliding across the hill (as if walking)
- Skating (on flats and down the hill)
- Garlands with a check
- Pivot slips with a check
- “J” turns (where pressure builds as you start the turn)
- Bunny hops
- Hop turns
- 1000 steps

3. Rotary Movements

- On a green slope draw with a pole a line 15 – 20 feet long, which is at first 60 degrees to the fall line and gradually goes down the slope until it ends up being parallel to the fall line. Now get yourself to the top of the line on the downhill side of it, with the closest leg to it being one foot away. Now ski down in a wedge to the end of the line without erasing it with the tails of your skis.
- Find almost a flat spot on the hill about 15 – 20 feet long. Try making two wedge turns in such a way that the loose snow “hops” on top of the front of the outside ski.
- Pivot slips
- Pretend you are a ski patroller pulling down the sled.
- From traverse hop into the fall line, and then shape the turn.
- Hockey stops
- Very sharp hockey stop at the end of a “J” turn. Start straight down the slope. Slide 10 to 15 feet with the left pole touch half way down. Then sharply pivot the skis to the left, spray the snow straight down the hill and plant the right pole down the hill. Your body should stay facing down the fall line at all times and ski boots should stay in the fall line at all times. To prevent skiing off to the left side at the very end, it is recommended that the pivot is a little more than 90 degrees. Now do the same to the other side.
- Whirly birds (360s on the snow)
- Pain in the “S” turns

4. Pole Plant

- On almost a flat spot on the trail, plant a pole and pull your skis 180 degrees around it keeping them on the snow. You can hold your pole like a pencil, heavily supporting yourself on the pole straps.
- Hop turns (Start with only 45 degrees and enlarge all the way to 180 degrees. Do them on flats and then on a gentle slope.)
- Leapers
- Aggressive hockey stops with the pole plant down the hill as you stop.
- Make as many rounded turns as possible in say 40 feet of slope keeping the skis on the snow. Blocking pole plant will be extremely useful as well as pronounced movement of skis back under you on the beginning of each turn. You should firmly pressure your feet and shins in the direction of travel and exhibit strong rotary movements.
- To distinguish a pole touch from a pole plant do “J turns” with an abrupt pivot and hockey stop at the end. Start straight down the slope. Slide 10 to 15 feet with the left pole touch half way down. Then sharply pivot the skis to the left, spray the snow straight down the hill and plant the right pole down the hill. Your body should stay facing down the fall line at all times and ski boots should stay in the fall line at all times. To prevent skiing off to the left side at the very end, it is recommended that the pivot is a little more than 90 degrees. Now do the same to the other side.
Depending on the terrain available, ski traffic, and snow conditions choose an appropriate lesson progression.

Lesson Progression #1 – Start with hop turns of 90 degrees on flat. This is good for very energetic skiers that can’t wait to get the job done. Does not use much space and good for high traffic slopes that are not very steep, or at least which start with a flat top.

- On a flat spot before you get to the slope, anchor yourself on your (blocking) poles about 4 feet apart and hop with your skis as to make an “X” on the snow. Make sure your pivot is under your feet and skis land on the snow at the same time and parallel to each other. To make it more versatile, make your jumps quicker and with different rhythms. You can count or sing a song and hop at the same time.
- Now start approaching the slope. As the skis start to slide forward, do your 90-degree hops with added blocking pole. When you land on your left edges, plant the right pole at the same time. This way you are landing on 3 points of contact.
- As the slope get steeper make your hops more from side to side, until you reach 180 degrees, that is exactly from one side to the other. Remember to hop up in one move pushing up from your feet and a planted pole, and landing pointing skis the opposite way and planting the other pole at the same time. Most of your spring should come from your core and legs. Try not to bend excessively in your hips. Upper body should not move from side to side. It should face down the hill at all times.
- Now you can try to smooth out your hops by making a short turn and keeping the skis on the snow. Your pole plant and upper body should do what it was doing while making hop turns.

Lesson Progression #2 – Start with pivot slips. Good when the slopes are slick and progression needs to be less aggressive.

- On a slick slope stand across the hill on high edges to prevent slipping. Now, gently release edges on both skis by decreasing pressure of your feet in your boots. If that does not make you slip laterally, try decreasing the edge angle with your ankles. Your shoulders should point straight down the fall line and the hips at 45 degrees. Skis should slip evenly, parallel to each other and straight down the fall line. Stop sliding by making skis edges dig into the hill more. This is done with your feet inside your boots. If that is not enough to stop you, try more ankle angulation.
- As with all drills, try faster side slips and quicker stops. Feel how your skis are on the snow when they side slip. The flatter the skis, the faster they slide. You might need to make more angulation to stop quicker. Push your hips into the hill by rotating ankles and hip joints.
- Make the stops more sudden. They are called checks or forming a platform, or sometimes sudden hockey stops. Plant the downhill pole the instant you stop. Can you tell that your body is low at that moment?
- Now is time to introduce pivots. This is when you turn your skis 180 degrees to face to the other side of the hill, while side slipping down the hill. Your feet should be sliding down in practically a straight line while performing the maneuver. Either do the pivots whithout checks or with the checks.
  1. If you do pivots without the checks, make sure you: straighten up your body, flatten the skis on the snow (so you are standing perpendicular to the slope) and pivot the skis 180 degrees under your upper body (which stays facing down the hill) – all at the same time. Since everything is slipping and moving, your turning will be performed by your core muscles working against your shins. Make sure your skis and slope form two parallel planes before you attempt pivots.
  2. If you do pivots with checks, make sure you: use a check to straighten out your body right after making the check, put skis parallel to the slope, pivot skis 180 degrees so they will point to the other side of the slope.

In both of these cases, make sure you keep your head and shoulders pointing straight down the hill, and make a pole plant right at the moment when your body moves into a tall, straight position, placing it perpendicular to the slope.

- After you feel comfortable with pivot slips, checks, and pole plants, try rounding the turns a little by allowing your feet to deviate from the straight line. However, make sure your shoulders stay on a straight line.
- Make your turns more dynamic by making your checks before your skis cross the fall line.
Lesson Progression #3 – Start with long radius turns and shrink the radius (ski in a funnel.) Good when the slopes are wide open, good snow, and skiers like speed.

- This progression speaks for itself. Start with long-radius turns and progressively make turns with smaller and smaller radius. As the turns get smaller the counter-rotation gets bigger, pole touch changes to pole plant and occurs before the edges are released in the transition and are planted lower and lower down the fall line and further from the skis, checks in the transition get more pronounced and begin feeling more like hooks. Do more and more steering with your feet as the turn radius decreases.

Lesson Progression #4 – Start with tuck turns. Good when slopes are narrow, skiers are strong and fast, but the slope is not very steep. Firm or soft snow is fine. This approach quickly produces dynamic version of the short swing turns.

- Get down into a tuck position and point the skis straight down the fall line. Do not fall into the back seat. As skis start sliding, actively use your core to keep up with them. You might even need to pull your feet under you as to stay on the balls of your feet.
- Apply small pressure on both boots forward as well as diagonally in order to make the skis turn gently to one side. Then reverse the pressure to get the skis back. Then reverse the pressure again. This will make small deviations away from the fall line to both sides. As the skis are in the belly of a turn, the legs are longer than in the transition but the upper body continues to face down the hill and move in a straight line.
- To control the speed make the deviations from the fall line bigger by applying more diagonal pressure on the ski boots with your toes and then your shins. Some toes should go up and others down.
- Implement the pole plant as your body is short in the transition. Think that the body goes down together with the pole.

Lesson Progression #5a – Start with skating straight down the hill. Good when slopes are narrow, skiers are strong and fast, but the slope is not very steep. Smooth surface would be good.

- Start this progression by mastering skating. Make sure your body goes with the ski that slides on the snow, so movement from side to side should be expected. Use core muscles to keep your body from dragging behind.
- On a gentle terrain skate straight down the hill and stop when you reach your peak tolerable speed.
- Do it again, but try going just a little faster before stopping. Do you feel that toward the end of your run you were placing your ski on its outside edge and then rolling it onto the inside edge before going to the other ski?
- Try it again with this awareness on your mind.
- As you get close to the finish of skating on one leg, make the ski turn to the inside just a little before going to the other leg. Progressively make those turns sharper and progressively eliminate the skating all together.
- Throughout this progression stay on each ski the same amount of time, about one second on each leg. This means that as the speed increases you will cover more distance on each ski while skating. Keep the torso facing down the hill. As the skating gets eliminated, your upper body will quit traveling laterally from side to side. Make turns the size and shape which will control the speed.
- Add the pole plant.

Lesson Progression #5b – This is a variation of the Progression #5a.

- Start this progression by mastering skating. In this variation of progression 5a we want the upper body NOT to move with the ski but to stay on a straight line at all times, so there should be no movement from side to side. Use core muscles to keep your body from dragging behind.
- On a gentle terrain skate straight down the hill, thinking that you are in the snowcat’s track, and stop when you reach your peak tolerable speed or you cannot move from foot to foot any quicker. Remember that in this progression your body stays in a straight line down the hill, so your skating will need to get faster and faster from foot to foot. It will not take long to reach this stopping point.
- As you get close to the point when you cannot skate from one leg to the other quickly enough, start making short radius turns.
Throughout this progression skating will get faster and faster from one foot to another, but the upper body will travel down the fall line at all times. Make short radius turns and shape them in order to control the speed.

Add the pole plant.

**Lesson Progression #6** – Ski in a low tunnel. Good when slopes are narrow, skiers are strong and fast, but the slope is not very steep. For skiers who like to work with both legs as if they were one. Soft snow is fine.

- Start in a flexed position straight down the hill, but not as low as tuck. Progressively push both feet into the snow as if pushing on a dialed weight scale and trying to have the needle point to a highest possible number. If your head goes up, you will hit the roof of the tunnel.
- Or, think about skiing in a low and narrow tunnel and kicking each wall with both feet at the same time. Be sure not to flex only in the hips.
- Perform tuck turns by dragging both poles on the snow far away from the skis. Flex the body equally throughout, but do not just flex in the hips and make the rear hang back.
- Add the pole plant.

**Lesson Progression #7** – Start with a gliding wedge. Good when slope is gentle and skiers are flexible. Smooth surface would be good.

- Start straight down in a gliding wedge.
- Start transferring the pressure onto only one ski by retracting the other ski, almost lifting it. Ski will take you off to one side. Now, without stopping do the same to the other side.
- Exaggerate the previous idea by increasing the edge angle of the pressured ski and letting the other ski slide laterally on the surface of the snow. This is called a crab walk.
- Add the pole plant.

**Common Problems, Their Causes and Ways to Break Them**

<table>
<thead>
<tr>
<th>Common Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just can't seem to get it.</td>
<td>Try a different progression. Try better rhythm. Try more flexion and extension. Try more rebound. Try stronger kick. Try hops with a pole plant that are on a flat spot of only 45 degrees.</td>
<td></td>
</tr>
<tr>
<td>Skis can’t seem to side slip together and parallel to each other.</td>
<td>Edges are not released evenly on both skis. The upper body might be favoring one ski. Try putting skis closer together. Get on a slicker slope so that you can slide easier and explore how the body movements affect the skis.</td>
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<tr>
<td>Upper body has difficulty pointing down the fall line.</td>
<td>Hold both poles together across and in front of the body. You can put them on top of your wrists with fingers down to prevent tipping. You can also grab poles in their middles holding them vertically and frame a picture that you wish to focus on during your maneuver. Or, you can think that you have flashlights on your shoulders shining straight in front of you. Now, make sure you shine the light down the slope while doing pivot slips.</td>
<td></td>
</tr>
<tr>
<td>Tail of an uphill ski catches on its inside edge when approaching transition.</td>
<td>Hips are over-rotating. Perform exercises which promote correct hip position. Making your stance narrower might help.</td>
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<tr>
<td>Skis do not want to start pivoting.</td>
<td>The body did not move down the hill when initiating the turn. Skis are still on wrong edges. Remember that skis must be flat in order to be pivoted. Perhaps not enough rebound. Try more flexion and extension. Kick both legs back in the turn initiation so you are on the tips of your skis.</td>
<td></td>
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</tbody>
</table>
It’s better to die with a good name than to live with a bad one.

Your companions are like the buttons on an elevator. They will either take you up or they will take you down.

If at first you don’t succeed, try reading the instructions.

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**Power Straps**

Have you ever seen skiers walking in their ski boots with power straps loose? Sure you have, lots of times. Whenever I saw one I would say “be careful, your straps are undone, you can trip on them.” Well, one day in Canyon Lodge at Mammoth Mountain Ski Area in Eastern Sierras of California, I was standing by the door leading out to the slopes when a skier carrying loads of equipment (his wife’s, his children’s?) and having loose safety straps walked in. I was just about to warn him when one of his straps hooked the other’s Velcro, as his feet were passing each other in mid-step, causing all of a sudden his feet to get tied tightly together and …. he went crashing down with all the equipment flying around. Case-in point.

*By Andrzej Kosmala*

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**Health Course**

*We thank again Danica Goodman, who is a videographer, photographer, layout and graphic designer who freelances for several of the area magazines and newspapers, including All About Women and The Avery Journal-Times, for sharing her knowledge with us. Health is a big part of snow sports professionals who need to stay on top of the weather, strength, and public. Danica, thank you again for your help.*
HEALTH BENEFITS of INDIGO FRUITS & VEGETABLES

Grapes are an excellent source of manganese and a good source of vitamins C, B1, B6 and potassium. Their beneficial compounds also include flavonoids, which also give them their purple color. Two of these flavonoids, quercetin and resveratrol, appear to decrease the risk of heart disease by reducing platelet clumping and protecting bad cholesterol from free radical damage, which initiates artery-damaging actions. Grapes contain anti-microbial and anti-viral properties, and the anti-inflammatory effects of resveratrol may help lower cancer risks.

Blueberries contain the highest antioxidant content among fruits. They have anthocyanins, ellagic acid, vitamin C, B complex and vitamin E. Blueberries help promote urinary tract health, protect against age-related eye problems, help keep memory sharp, and, being rich in fiber, they also are beneficial for constipation and digestion. They have been shown to aid in reducing belly fat, promote a healthy heart, and reduce cancer risks.

Blackcurrants are renowned for their high content of Vitamin C, potassium, and Gamma-Linolenic Acid – a very rare Omega-6 essential fatty acid. Black currants contain around 300 anthocyanins, which are very potent antioxidant compounds that are responsible for their color. Anthocyanins inhibit the enzymes Cyclooxygenase 1 and 2, and reduce inflammation and the effects of arthritis in the body, with an effect similar to aspirin or ibuprofen.

Eggplants are a very good source of fiber, manganese, copper, B vitamins, and potassium. Also, it is a good source of folate, magnesium, and tryptophan. Eggplants have been found to contain phenolic compounds – especially chlorogenic acid – another antioxidant which has shown to be beneficial for its anti-cancer, antimicrobial, anti-LDL and antiviral activities.

Blackberries are packed with polyphenols and anthocyanins and help prevent cancer and heart disease. Blackberries contain ellagic acid – an antioxidant that protects the skin from ultraviolet damage. Its phytoestrogens help relieve bloating, food cravings, and hot flashes. Phytoestrogens contribute to brain and immune functioning and heart health. Its fiber aids in weight loss and weight management. It promotes healthy digestion and lowers the risk of heart disease and diabetes. Blackberries offer a good amount of vitamin K, which is used by the body for the normal clotting of blood and to aid the absorption of calcium.

Plums are a very good source of vitamin C – an antioxidant which aids in wound healing, prevents periodontal disease, and maintains collagen and connective tissue in the body. Plums are rich in vitamin B2, fiber and potassium, and two unique phytonutrients known as neochlorogenic and chlorogenic acid, which appear to regulate the release of glucose in the bloodstream after a meal. These may have favorable effects on blood sugar levels.

Fresh fruits and vegetables are our body’s ally for healthy living. Their color indicates the health benefits they offer. Their nutritional punch helps protect and combat disease and conditions. The blue/purple hues in foods are due primarily to their anthocyanin content. The darker the blue hue, the higher the phytochemical concentration. Other examples are purple cabbage and purple onions.
Thoughts for the Month

• What does the phrase “Strong inside half” mean to you skiers?
• For you skiers, what is a “tip lead” and, is it good or bad if you have it?
• Red is another special color. How does it speak to you?

Elaborations on last month’s Thoughts for the Month.

• In quality skiing, should we always try to have shoulders parallel to the slope? The answer is NO. It all depends on what kind of skiing we are talking about. Have you heard of dynamic skiers who touch snow with their glove? Can you possibly have shoulders parallel to the slope when skiing like that? Now, how about on a very steep slope? Can you possibly have shoulders parallel to it when your rear is scraping the snow? Look at the photo of Tim Café of New Zealand to the right.

• In quality skiing, should both legs be always parallel to each other? The answer is NO. Look at racers and other aggressive skiers. Their outside leg is so much on the inside edge to prevent being thrown over to the other side, that it is physically impossible to match that angle with the inside edge. The inside ski becomes an “outrigger,” or more precisely: “in-rigger.” Some “A-framing” is necessary in those cases. How about parallel skis? Also NO. Look at the photo of Janica Kostelić of Croatia, one of the most celebrated alpine ski racers ever. (See her brother on page 6.)

• In quality skiing, should the “railroad tracks” be always parallel to each other? The answer is NO. Here we also talk about very dynamic skiing. If the weight is 95% on the outside ski, how can the inside ski possibly be pressured enough to bend the same way? In fact, it would have to be bend more since it tracks a tighter turn being on the inside. Physically impossible when the weight distribution is far from even on both skis. Look at the photo.

• WHITE is the color of perfection and often associated with light, goodness, innocence and purity. Often we associate white with hospitals, doctors and sterility. We, outdoor enthusiasts, think of white snow, white out, vertigo, white water, white clouds, stars, lightning, and so on.

So, is white really a color or a lack of a color? Some people say that they do not want a white car – they want a car with some color.
There are 6 ski areas in North Carolina, and we list them alphabetically:
1. Appalachian Ski Mountain in Blowing Rock
2. Cataloochee Ski Area in Maggie Valley
3. Sapphire Valley Ski Resort in Mars Hill
4. Ski Beech Resort in Beech Mountain
5. Sugar Mountain in Sugar Mountain
6. Wolf Ridge Ski Resort in Mars Hill

Announcements

Looking for great socks? Yes, of course you are, because you know that skiing success lies in the quality of the socks you wear. You might wish to check out:

Marketplace

If you are working with kids, or you simply need to get in and out of your ski boots fast, and you want them to be comfortable and of top quality, you might be interested in my rear-entry Nordica Gransport Executive Ski Boots in size 28 – 28.5. They are almost new. Asking $279. Write me at kosmalaw@bellsouth.net, call at 828-719-6884, or talk to me at Sugar.