Let the competitions begin. Yes, all the fastest, most daring and most skilled winter athletes will compete in Vancouver, BC in wester Canada, February 12 – 28. It is hard to imagine what sort of training they had to go through to make it to this point. Even the most talented had to endure tremendously regimented schedule for years, as well as temporary tragedies. They had to surface above all others. Just ask Krista Schmidinger, our local two-time Olympian (1992 and 1994), and her twin sister Kim. They will tell you first hand how much work and dedication it takes, not just to make US Ski Team, but to make it to the Olympics as well.

Below is a copy of a picture of the US participants in the World Junior Championships in 1986. Do you recognize the young lady on the right in the front row? That is Krista. It was sad for me to find out that her sister Kim had knee problems at that time. Look closely, there are others on the photo that made it to the “top,” so to speak. I want to thank Albert Arnaud – their coach and himself an Olympian (1972, 1976, 1980) – for providing me with this picture, and Krista for giving me the permission to publish it.

I am sure that this picture stirred up a lot of special memories for our two young ladies, Kim and Krista, as well as pictures that are yet to be taken at the Olympic
site in Vancouver will one day bring old memories to today’s Olympic athletes. I hope and pray that they all will be pleasant ones.

As you remember, the New Year came to our mountains with frigid authority. Jack Frost was generous with temperatures in single digits, and so we made lots of snow. Some of it was nicely stored up on top of Whoopdedoo creating a flat shelf and then a nice pitch down of over 60 degrees. Impressive. It looks like the last weekend in January with heavy snow in the High Country and cold temperatures will keep our slopes well covered with all the white stuff. Perhaps Mother Nature might like to come and enjoy them herself.
Now, it is time for me to start thanking people again. The whole world is connected and we are the way we are because of the people around us and because of what the world is like. So, without further due let me start with thanking Mark Russ at Ski Country, located in front of Sugar, for putting me on the beginning of the season in a ski boot (yes, singular) that my reconstructed leg could tolerate. Then, he worked with me in fitting a smaller rear-entry boot when swelling in my leg has diminished. On the beginning of January, I saw Van at Foot Loose Sports Shop at Mammoth Lakes, CA. I want to thank him for putting riser under the heal of my bad leg and for padding the boot so that I could ski with less pain. After a week of skiing at Mammoth in one rear entry boot and one performance boot, the time came to try fitting matching boots. Many thanks go to Corty Lawrence at Foot Loose Sports for adjusting new Nordica Dobermanns to my bad leg with serious canting, heal riser, etc., for doing new footbeds, and injecting custom liners to mold around my leg. Very painful procedure, but absolutely necessary for my future dynamic skiing. I am still in process of braking these new boots in. Thanks also goes to all of you instructors at Sugar for your continued support.

Don’t forget, my e-mail address is kosmalaw@bellsouth.net. Send me your materials that you would like to publish in Peak Performance.

Education

You Should Try It!

By Witold Kosmala
PSIA-E Alpine, Level III

This short article I wrote for Spring issue 2009 of SnowPro published by PSIA-E. It did not make it into the print until Summer 2009. Perhaps you read it, perhaps not. But the message still remains and is strong. So, here is the copy:
My dear friends in skiing. If you read my article in the Summer 2008 issue of SnowPro, you know that I had a very serious skiing accident during DCL try-outs in Pennsylvania on March 4, 2008. I had a very difficult time getting back on my skis last season, not just due to health issues, but due to bone spurs in my ankle area that were sticking straight out. The skin covering them was pinched by the ski boot no matter how the leg around the bone spur was padded. Less inflammation meant longer the spur, and more stretched skin by a donut surrounding the bone spur. The only boot that I could even put on was a rented loose rear entry boot. Even that, I could not buckle. Skiing in a boot like that was very interesting, to say the least. Not only that leg was still weak, but foot had no support in the heel. In fact, when tip was pressured too much, the heel slid out of the boot. I had two different boots on, with bindings mounted in different places on the skis. Very interesting sensation. Except for pain from the pinched skin on top of the spur, skiing flats eventually became tolerable. Moving up into the steeper slopes was more challenging. This was not only due to the weak leg, but due to zero support in the back of my hurt leg. When I finally got to skiing a double diamond slope wearing good boot on my left leg, and unbuckled rear-entry boot on my right leg, I celebrated with my friends at Sugar Mt. My condition made me realize that perhaps skiing in unbuckled rear-entry boots would be good experience for everyone. Many skiers think that their weight is where it should be, but unbuckled rear-entry boots on a steep terrain would probably open their eyes. Unbuckled, loose rear-entry boots will not hide anything from anyone. They will tell all the truth in an instant. Try it next chance you get!

My Two Left Feet

By Gordon Carr
PSIA-E Alpine, Level II

Is there anything more beautiful or graceful than two accomplished powder skiers making figure 8s down an untracked bowl? Is it maybe matched by a World Cup racer who powers down an unbelievably icy and steep GS course at speeds we mortals can only imagine? Or how about a truly expert skier who is making rapid, short, braking turns down a steep couloir with precise speed and directional control? Other than sheer athletic ability and courage, what is it about these performances which captures our attention and admiration? Part of it, I believe is the symmetry of their performance; turns to the right are as powerful and accurate as turns to the left. The skiers are in balance showing their athletic prowess equally in movements to the left and right; they are symmetrical in their ability to affect the same precise snow tool performance in both directions!

And yet, they, like we mere mortals, are either right or left handed and either right or left foot dominant in strength and coordination. True ambidexterity is very unusual; most of us have a hand preference AND equally we have a foot preference for skilled and precise motor movements. Think of writing or drawing fine lines with the “off side” hand. Imagine, too, the fine motor coordination and the subtle muscle movements we are demanding of our “off
side” leg and foot when we are making ski turns with that foot being the balance and support foot. Additionally, most people have greater strength in their dominant side muscles, which also plays a part in skiing and snowboard turns. The link between handedness and footedness is not straight forward however. Just because you are right hand dominant does not mean you are right foot dominant. To a large degree, your previous sports history has a significant impact on leg and foot strength and coordination. For example, baseball players who pitch right handed or bat right handed tend to have right dominant legs and feet. However, right handed basketball players tend to be left leg dominant in strength.

These side dominance strength and coordination issues impact our skiing (and snowboarding, hence “goofy footed” and “fakie” riding but in this article, I’ll only talk of skiing as I’m goofy headed about boarding). We show our asymmetry in skiing in a number of not so subtle ways; as several examples:

1. If we are left leg dominant in strength and coordination, we tend to be more comfortable when that leg is the “outside” leg in a turn. Hence on difficult terrain we tend to ski more comfortably on trail left making a turn to the right away from the dangerous trail edge, away from trees, rocks and ungroomed snow. A right turn has our “good” left leg being on the outside of the turn. We let the weaker right leg make the less critical left turn when we are more in the middle, “safe” part of the trail.

2. Habitually we will make a hockey stop to the side where our stronger, dominant leg is on the downhill side.

3. Doing pivot slips within a corridor we will bobble and be less adept with balance and control and tend to slide out of the corridor more when the weak leg is on the outside of the pivot.

4. One legged balancing and edging challenges, such as White Pass turns, will be far more comfortable and precise with our dominant leg doing the balancing, edging, and turning.

So, what can we do about asymmetry? In a lot of ways it is an issue of self discovery and examination of internal feelings of comfort in our skiing or boarding performance. In clinics with advanced students, or in our own training clinics, we can present challenges of increasing difficulty to help identify asymmetry in strength and coordination related to snow tool performance. These challenge tasks can be relatively easy: alternately skiing one side of a trail for 10 or 15 turns and then the other trail side; or very difficult: skiing White Pass or pendulum turns on one ski and alternating legs. Performing hockey stops and pivot slips fall somewhere in the middle of the difficulty continuum. Periodically you should stop and assess internal feelings of comfort or have someone assist in judging accuracy of performance of the task. Also, we can just ask our guests (or ourselves) which directional turn or side “works best” and most of us already know our favored and strong side if we’ll just admit it. We’ve all heard “newbies” complain how they can turn one way better than the other. But it is still a fun and helpful clinic to conduct with guests and it is instructive for ourselves to be in a training clinic with “Identifying Asymmetry” as the topic.

Okay, so you’ve figured out what you already knew: turning one way is stronger, more
precise and comfortable than the other. What do you do about this asymmetry? First, concerning the difference in strength between your two legs, you might try developing a summer sport that is very “bilateral” such as swimming, running or cycling (although, remember the oft told tale of people lost in vast forests or deserts who walk in a large circle because their stronger, dominant leg produces a slightly longer stride when walking). In the gym when doing leg strengthening activities, when ever possible, do all two legged exercises with ONE LEG AND ½ YOUR USUAL WEIGHT. For example, doing seated leg extension quad strengthening exercises with 120 pounds resistance, your dominant, strong quad probably is lifting 70 pounds and the non dominant leg quad is lifting 50 pounds. Instead do this exercise with only one leg at a time and a weight of 60 pounds; your non dominant weak leg will quickly tell you with ouches and ow, ow, ows, if it has been loafing in the double leg work…bet it has! Ditto all other exercises for lower leg strengthening; use each leg separately and ½ your typical weight when physiologically possible. Pay special attention to developing the strength in your non dominant leg hamstring muscle, it is going to be especially less strong. I think the current mantra is that the quads and hamstrings should be equally strong for maximal knee joint protection, but this goal is rarely met by us regular folks. In addition to knee protection, however, the hamstring muscles play a key role in avoiding excessive lead change in your turns. The hamstring muscle holds the new inside leg back under the hip and “out of the way” of the crossover of your center of mass at edge change. (This just seems to be a bunch of words unless we take this stuff to the snow in training sessions.) But anyway get those hamstring muscles strong, especially on your non-dominant side.

How about actual skiing and on snow stuff? First, awareness of the need to learn is the first step of any learning. With awareness, some corrective exercises become obvious. Use mental discipline and do ALL hockey stops to your weak side (unless it is a true emergency situation). Make a run where you do hockey stops repeatedly all the way down the trail! Find a groomer track and do pivot slips within the corridor of the groomer, paying special attention and work to insure that the pivot to your weak side does not drift out of the corridor. Do “hockey goes” down an entire, fairly steep section of trail. These are like pivot slips in that you don’t come to a halt, but are like hockey stops in that you’re always using your weak, non dominant side for the slide and drift. Almost any skiing task such as falling leaves, forward side slips, painting the S, or dipsy doodles can be used as challenge tasks and corrective exercises. Becoming more balanced and symmetrical in your performance requires personal discipline and focus. Every so often, give yourself a focus for one ski run…don’t just let ‘er rip and fly down the trail…make it a personal improvement training run.

Doing one legged ski tasks to strengthen your non dominant leg may be more productive and beneficial if you have a trainer or mentor skiing with you. This person can give immediate feedback about the symmetry of your performance and she can provide helpful corrective suggestions. Finally, you can challenge yourself and make those “edge of trail” runs alternating sides and really attend to your internal feelings of comfort or discomfort. With practice and focused attention it is possible to strengthen your “weak side”, develop more confidence in the “off side turn”, and have your skiing become more symmetrical, flowing and beautiful to observe. Good Luck.
I like to give at least a brief mention about wax and waxing in all my ski and snowboard lessons. Typically, I tell the students why we wax our skis/boards and if they want more information, to consult the internet.

**What are the purposes of wax?**

Wax is used primarily to let the skis/board glide smoothly on the snow—instead of being grabby or sticky. If the skis/board doesn’t glide well, you cannot achieve your optimum performance.

If the ski/board glides smoothly, it stands to reason you will likely have more control in your movements. More control = higher performance.

*In worst cases*, the snow might stick to the bottom of the skis/board and prevent any movement at all. Rental skis/boards are particularly prone to poor wax performance, because the rental shop might not know or care about waxing.

Wax allows more speed. The racers are very aware of the type of wax they use for each snow and weather condition, and are very careful in how the wax is applied.

Frequent wax application will help extend the life of the skis/boards. Wax keeps the plastic base lubricated, and helps it slide over potentially damaging objects, like rocks.

**The theory behind wax for skis and snowboard.**

When a ski or snowboard moves over the snow, it creates friction from the pressure and the movement. When the snow temperature is very cold, the purpose of the wax is primarily to prevent the sharp points of the snow crystals from dragging on the plastic base, and slowing the ski/board.

On warmer days, when the snow has a higher moisture content (this also applies to high humidity days), the primary purpose of wax is to reduce the suction (another type of friction) of the water between the plastic base and the snow. But even on very cold snow, the pressure and movement of the ski/board melts the surface of the snow, so that there is a thin film of water created between the plastic base and the snow. It is theorized that there’s always an element of “wet friction” (suction).

Friction is also created between the ski/board and the snow by static electrical charges. This occurs mostly when there is dirt in the snow, such as when you ski on old snow in the springtime.
What is wax?

Most waxes used in the snow sports industry are “hydrocarbon” based, and are derived from the same basic process that converts crude oil into gasoline, kerosene, and asphalt, among other products. Wax made from crude oil is also called “paraffin wax”.

There are other types of wax, such as beeswax, many types of plant wax, and ear wax (yuck!) Beeswax was used for skis in the early days (and maybe coming back into fashion?-- see the end of this article), but hydrocarbon wax is the norm today.

Hydrocarbon (paraffin) wax for snow sports is refined to high degree, and may be modified with additives to give different desired properties (such as a nice color, a pleasant smell, or an antistatic treatment to keep dirt and pollen from sticking to the base).

Waxes are refined and mixed with additives so that some waxes are harder and some are softer (judged by the “melting temperature”). Hard wax is for cold snow temperature, to stand up to the greater friction of the hard snow crystals. Warm snow (spring snow!) contains more liquid water, and requires a softer wax that repels water to a higher degree. The softer waxes have a lower “coefficient of friction”, to use the scientific term.

In the late 1980’s, there was a new wax introduced for snow sports—called “fluorocarbon” wax. This is a high tech wax that contains special chemicals. Fluorocarbon waxes are related to the same material as “Teflon” and “Gore-Tex”. This chemical has amazing properties, to resist heat, cold, friction, and wear.

The fluorocarbon waxes are typically more expensive than hydrocarbon waxes (and the top-of-line fluoro waxes are much more expensive!). The advantage is primarily for racers, because the fluoro wax repels water much more effectively, and hence allows the ski/board to glide faster. Fluoro waxes are also more difficult to apply to the base, and must be used with great care to avoid breathing the fumes from burning wax (it can be highly toxic).

There are snow sports wax manufacturers who offer a “low fluoro” blend of wax, which has a small amount of fluorocarbon wax, mixed into a large amount of hydrocarbon wax. These waxes are typically a very light blue color.

Fluoro waxes are most effective for warmer (wetter) snow. And keep in mind, these fluoro waxes are really only cost-effective for the person who is racing.

Some of the fluoro waxes are sold in powder form, and the powder is sprinkled onto the plastic base, and then is rubbed into the previously-applied wax, using a cork block or special brush.

Also available in both hydrocarbon and fluorocarbon waxes are liquid waxes. These are very easy to apply, like a deodorant stick. But they generally are not very durable or long-lasting, as compared to solid waxes (this point is debatable).

Keep in mind that some wax manufacturers formulate the waxes for a range of snow temperature – and some are formulated for the air temperature. Makes it a little confusing. Check the labels.
Different types of wax can be mixed together, to create a customized formulation, such as for high-level racing. Not necessary for the average skier/riding.

**Why are there different colors of wax?**

Traditionally, the “Big Two” wax companies, Swix and Toko, color-coded their solid waxes according to the intended *snow temperature*. Hard wax (for cold snow) was colored blue, medium-hard waxes were red, and soft waxes (for warm snow) were yellow.

These unofficial industry standards are still in effect. However, there are many colors of wax on the market today—white, gray, black, green, purple, etc. Check the package to see what you are buying. Some wax companies offer a multi-pack of various wax types. The natural color of the wax is white, so the colors are just a coloring agent. However, black or gray wax contains graphite powder or molybdenum lubricant, which makes it dark in color.

**How is wax applied?**

Wax can simply be rubbed onto the ski/board base like a crayon. This is better than nothing, and will normally hold up for a few runs down the mountain.

However, to truly get an effective wax job, the wax has to be *melted* into the plastic of the base. Melting is done with an old clothes iron on medium heat setting, or with an electric iron especially made for snow sports.

Ski and snowboard bases are made of polyethylene plastic, and the material has microscopic pores that can absorb and hold wax, if melted into the surface. And…*do not* apply wax to a cold ski/board!

Holding the iron a few inches above the ski/board, a wax stick or bar is held against the hot iron surface until it drips onto the ski/board base. Not too much wax!! Just make a nice line of drips along the whole length. Then, place the iron on the base and “iron the wax.” *Keep the iron moving* or you will melt the plastic base!! You’ll see the wax melt into a nice smooth layer or coating. If the wax is smoking— the iron is too hot!

Let the base cool for 15 minutes or so, and then take a plastic scraper, and scrape off the excess wax from tip to tail. Be neat!! Don’t leave your wax scrapings for the next person. Clean the work bench and floor!

After scraping, the wax can be polished to high gloss, using a nylon brush or horsehair brush (like a shoeshine brush), or cork block, or you can even use a pad made of folded newspaper. This step is most important for cold temperature (hard) wax.
If you take some time to do your wax job, the result will be a nice shiny base, without any whitish “dried-out” looking plastic.

As a final step, the professional wax person will use a copper brush or hard nylon brush to run along the waxed base. This will clean out the wax from the “structure” of the plastic. “Structure” is a pattern of tiny, lengthwise grooves that are cut into the plastic base by the manufacturer, or by a ski tuning shop. The grooves help to eliminate the suction from water between the ski/board base and the snow. We’ll talk more about “structure” in a future article.

Instructor tip!

Keep a small piece of wax in a plastic baggie in your pocket. There are many times a student won’t be sliding due to poor waxing on their rental sticks. Rub the wax on, and you’ll be set to go for your lesson.

I normally just use a piece of paraffin “canning wax” for this purpose. This inexpensive wax is used for home canning, candle-making, candy-making, and lubrication. The most common brand is Gulf Wax. Available in any grocery store for about $3.00 for a 1 lbs. box. It does the job adequately, and is a heck of a lot cheaper than ski wax.

How often should I wax?

My recommendation to students is to apply a hot wax after about every three days on the snow. As instructors, this is a good schedule to keep, in my opinion. Wax at least once a week, if you are on the snow every day! The more, the better.

This recommendation is for general use, and does not apply to racers, or special considerations such as major weather changes (cold to warm, warm to cold).

More information please.

You can find a lot of great information about ski and snowboard waxes and waxing on the internet. YouTube has some good videos on how to wax your sticks. Take time to educate yourself.

The primary brands of ski/snowboard wax are as follows. There are a few others. These companies have great websites and technical information.

- **Toko** (great technical downloads on PDF)
- **Swix** (great technical downloads on PDF)
- **Holmenkol** (great info—but all in German only)
- **Dominator** (some good technical information)
- **Hertel** (download their “Wax Fax” booklet)
- **OneBallJay** (focuses on snowboard market primarily)
Environmental concerns about ski/snowboard wax.

Is wax harmful to environment? You can research this subject on the internet. There is some recent development of “natural” (plant-based) waxes, for the ski/snowboard market.

And have you every wondered where those hydrocarbons, and especially those fluorocarbons, end up???

Teaching Tips

Wide Track Parallel Turns

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

Witold Kosmala
PSIA-E Alpine, Level III

Ross McNeil
PSIA-E Alpine, Level II

Purpose

Wide track parallel turns open the door to skiing a more challenging terrain. If performed correctly, they will be more efficient than other more elementary turns, such as the wedge and wedge Christie, and will permit the skier to ski for a longer period of time. Open track parallel turns, sometimes also called Christies, can take a skier to steeper slopes, permit higher speeds, allow skiing in more difficult snow conditions, provide more control and improve turning abilities. Once these turns are mastered, skier is on the way to learning more dynamic skiing, which will open the door to an intermediate level skiing on blue/black terrain.

The words “open track” come from the “old school” before the era of shaped skis began in 1990s. At that time, in recreational skiing, a sought after, final skier’s stance was with skis very close together – boots almost touching each other. In order to get to that level, an open stance with legs shoulder width apart was initially introduced, since legs wider apart
provided better lateral balance. Nowadays, advanced skiers retain this wider stance in dynamic skiing. Only certain situations call for a narrower stance, like skiing in powder and moguls.

In this article we normally refer to the wide track parallel turns as simply parallel turns, but at an elementary level. The skis stay shoulder width apart and parallel to each other at all times, but a good bit of “smearing” is allowed. In fact, even in final form the track in these turns is always skidded but not much. Hence, called Christies, but without wedge entry into a turn. In order to master these turns, skier will need to develop better balance, improve edging abilities, learn more about pressure, and get more skilled with rotary action. A better fitting boots that more accurately transfer skier’s movements to the skis will greatly improve the learning process.

**Balance**

At first some skiers may find balancing needed in parallel turns easier than in wedge Christies because both skis do similar actions and thus so help each other out, unlike seemingly in wedge Christies. If this false pretence helps in learning new skills, than that’s great. It is true that in wedge Christie turns each leg does its own thing, but actually it was the inside ski that needed most attention. In wedge Christies, except for the beginning when the wedge is formed, skier’s movements are somewhat “sequential.” In parallel skiing, all moves are performed on both skis at the same time. There is no stepping, wedging, or hopping. Both skis are to remain on the snow at all times. More skilled leg-to-leg balancing is required.

As the skier is standing or moving across the hill he is balanced with more weight on the downhill ski. To begin a turn, movement forward and a bit down the hill (at the same time) is implemented, just enough to flatten both skis on the snow and begin balancing on both feet equally, gradually transferring more weight to the new outside ski of the upcoming turn. As the skier reaches the fall line there should be more and more weight transferred to that outside ski (depending on snow conditions etc.) Forward movement can come from putting the ski tips gently lower down the hill than the tails, as well as from the body movement up and forward by using the core muscles. The movement up, forward, and gently down the hill is lead by skier’s head and shoulders, but remembering NOT TO LEAVE HIPS BEHIND, as
he wants to achieve inclination of the whole body, including his ankles, not just leaning the upper body.

**Edging**

In the transition, both skis need to be on the uphill edges the same amount to prevent lateral slipping down the hill. As the skier moves the body forward and slightly down the hill, skis will gradually flatten. As they reach the fall line new inside edges of both skis will become gradually engaged. In fact, the skier will strive to gradually, progressively engage new inside edges of both skis by the same amount, starting with flat skis at the beginning of the turn/transition between turns, and ending with both skis on their inside edges. Flatter the skis – more lateral slip. Depending on the skier’s weight, desired speed, desired turn radius, and desired turn quality – more or less edge (that is, higher or smaller edges) need to be implemented.

**Pressure**

As the skier is standing or moving across the hill, he is in a neutral position, maintaining shin contact with both boot tongues but not pressuring them. When the skier wants to start a turn he begins pressuring both boot cuffs just a bit off center, toward the downhill. The amount of forward pressure will depend on how sharp the turn is supposed to be.

**Rotary Movements**

As the skier starts to turn, he will rotate his upper body to follow the skis as they turn, but WILL NOT rotate the body MORE than the skis turn. This really means that the skier will maintain FRONTAL, SQUARE upper body relationship to the turning skis, with minimum counter, especially in longer radius turns.

**Pole Touch**

Pole touch is used as a timing device and to help direct the extension of the body forward and simultaneously a bit downhill, i.e. on the diagonal to the directions his skis will follow in the upcoming turn. As a timing device, pole touch is performed just before beginning a new turn, on the side to which the skier wants to turn. Just like turn signals when driving a car. A pole should be planted vertically without stretching the arm forward but rather moving the whole body and after planting the hand holding the pole does not fall back by pushing off the pole, but rather moves forward, like putting in the first gear in a car with manual transmission, to prevent excessive rotation of the torso and dropping the inside arm in the upcoming turn. Since the skier holds poles with their points facing backwards, not down, the skier makes the pole ready for planting by gentle wrist motion while still making a previous turn. Of course the skier strives to always hold his HANDS in front, where he can see them in his periferal vision.

**Terrain**

The skier should begin on a gentle, fairly wide terrain, progressing to blues as his ability increases in order to avoid fear of having his skis move into the fall line.
Lesson Progression

- static, standing across the hill, learning proper balancing, edging and pressure movements
- traversing
- side slips to practice simultaneous edge changes movements
- traversing with edge release, a bit like garlands
- traversing with extending the body forward to pressure boot tongues
- garlands practicing rotating skis more and more, with goal of reaching fall line, but not crossing it.
- complete turns with progressively higher and higher edge engagement.

Common Problems, Their Possible Causes, and Ways to Break Them.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause and Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-shape turns</td>
<td>Fear of facing the fall line. Practice on very gentle terrain slow going into the fall line, staying there for specified amount of time (ex. count to three) and then continue the turn. Practice garlands going into the fall line but not crossing it.</td>
</tr>
<tr>
<td>Lack of forward pressure</td>
<td>Practice standing on the ball of the foot in traverse. Practice forward extensions in traverse. Practice gentle garlands and then more demanding ones.</td>
</tr>
<tr>
<td>Inside ski tail pushes the outside ski tail in order to complete a turn.</td>
<td>This might be a result of sequential turn initiation compounded with skier's inability to maintain wide stance steering both skis in the direction of the turn, steering inside ski even more than the outside one since it makes a tighter turn. Practice simultaneous edge release, by the same amount, of both skis and steering especially the inside ski while maintaining EXTRA WIDE stance. At the end of the turn skis become divergent and the tails touch, usually caused by poor steering of the inside ski that is flatter on the snow than the outside ski, and too much pressure on the tails. In addition, the outside ski did not complete its turn. There is a possibility that the skier stands too vertically and inside edge catches and pulls inside ski in a tighter arc than the outside ski. This can be prevented by making sure the body is perpendicular to the slope.</td>
</tr>
<tr>
<td>Excessive edge engagement of the outside ski, which prevents a smooth turn.</td>
<td>Don't rush the turn. Practice very slow, very progressive edge release of both skis and equal, also very progressive, engagement of new edges. (Practice on a gentle slope to remove the fear factor.) Possibly the outside knee is too close to the inside knee forming a so-called &quot;A frame,&quot; or there is too much angulation.</td>
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### Additional Exercises to Further Improve Open Parallel Turns

- Practice side slips and falling leaf, in order to improve edge control.
- Practice side slips with edge engagement to a stop. This is the end maneuver of the hockey stop.
- Try bouncing up and down while linking turns, the so called “bunny hops” if the skis leave the snow. This is good for balance, good stance, and proper turn initiation.
- Ski steeper terrain, ski up the edges of the slopes, attempt banking.
- Think that you are “running” down the mountain instead of “walking.” This will give you a better stance perpendicular to the slope, (instead of improper vertical position.)
- Ski holding the poles as in the photos below. Keep these poles parallel to the slope at all times when linking open parallel turns. (This is NOT the case when skiing is dynamic. Look at Andrzej’s dynamic photo where one of his hands touches the snow. His hands are NOT parallel to the snow.)

<table>
<thead>
<tr>
<th>Excessive edge engagement of the inside ski, which prevents a smooth turn</th>
<th>Here we usually deal with the skier who keeps inside ski on its old edge, not releasing like the new outside ski does, allowing wedge to form and making it very difficult to steer in the direction of the upcoming turn. However, if the inside ski flattens in the initiation of a new turn and then at the end it gets stuck on its inside edge, then most likely skier’s hip over-rotated and/or moved too far over the outside ski. Very seldom do we see excessive INSIDE edge engagement of the new INSIDE ski of the upcoming turn. The problem might have to do with incorrect boot canting or body type of the skier.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside ski slides over toward the outside ski making track not as open.</td>
<td>Inside ski is flat on the snow and the skier permits the ski to slide latterally toward the outside ski. The inside ski needs to be edged the same amount as the outside ski. It is likely that the skier is leaning inside the turn and/or has knees too close together. Inside ski lacks proper steering.</td>
</tr>
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Witold demonstrates how to hold the poles parallel to the slope while skiing open parallel turns – NOT dynamic. This helps with proper positioning of the body over the skis. Unfortunately in order to hold both poles, arms are little narrower than desired. Head looks always in the direction where the body needs to go next. When he looks down, he can see his body directly underneath him. Photo by Josh Edwards.
• Use more active steering. Do not just stand on a ski and expect it to turn with a proper body position. Practice the movements illustrated below.

• Shuffle your feet farward and backward while linking parallel turns.
• Try to decrease amount of skidding by increasing the edge angle and moving the body “with” the skis.
• Work with a partner. Ski very flat terrain in a wide track parallel as slowly as possible. The person in the back will say “good” if you do not use a wedge entry into the turn, and “bad” if the turn starts with a wedge. If you hear “good” many times in a row, slow down.
Gordon’s Column

On page 3 of the January issue of *Peak Performance*, Gordon Carr invited *everyone* to give suggestions as to:

- How do you know when one is ready to move up to the next level of difficulty?
- What can be done on easier terrain that can prepare a skier for a harder terrain?

Here are a few ideas. Perhaps you would like to share some of yours. Just send it to:

Kosmalaw@bellsouth.net

and we will put it into the next issue.

Here is another skill I like to evaluate to assess a guest’s readiness to advance to more difficult terrain. For guests moving from green to blue terrain, I want to evaluate whether a person can STOP with something other than a braking wedge, like completing a turn until you come to a stop. Sure a wedge will stop you, but it can take a LONG, LONG time and good leg strength to do so on blue terrain. For those moving from blue to black I want to see a rock solid hockey stop performed immediately in any conditions. For these reasons I like to introduce hockey stops very early in a guest’s learning journey, if only to give them the idea that there are ways other than braking wedges and “holding a turn to a stop” to control their descent down trails.

*By Gordon Carr*

It is always difficult to simulate steeps on blue terrain without having to ski at high speed. One task that can do it is a “horse and the buggy.” Below is a photo that demonstrates this activity. A skier in front just points the skis down the hill and later gives feedback to the skier in the back, like: was the ride jerky, was I slowing down and speeding up drastically, was I tossed around a lot from side to side, etc. The skier in the back skis with short radius turns, trying not to jerk the front skier much. Due to extra weight of the front skier, the one in the back experiences forces similar to those on a steeper slope.

*By Witold Kosmala*

Witold in the back and his brother Andrzej Kosmala in the front, demonstrating a “horse and the buggy” maneuver on a flat terrain at Mammoth Mtn., CA. Here Andrzej had to push to get started, thus his skis are divergent.
Skiers often come to our consumer demos looking for a rundown of our lineup, a quick suggestion on which ski might be a good fit for them, and the chance to make a few turns on a model or two. It doesn’t take long to become adept at matching ski models to skiing personalities, and K2’s Apache series makes the job that much easier. Here’s a quick synopsis of how we break down the differences in our models.

Once you have an understanding of the technology that makes our skis such versatile all mountain tools, you can easily see how every ski has a unique place in the lineup and how they might work in different situations. Our intermediate level and up skis, use a wood core made from spruce and fir for a lively feel with strong edge hold. All of our skis are triaxially braided, which is K2’s patented process for applying a fiberglass sock completely around our wood cores. This process is unique to K2, and gives our skis that, “K2 signature ride,” by allowing us to build a ski with a higher level of torsional stiffness that isn’t too stiff tip to tail. All of our Apache series models feature a secondary core that sits atop the wood core, known as, Mod… think mass dampening here. This is an elastomer that eats up vibration without adding to the stiffness of the ski. You’ll see a larger amount of Mod in our higher end skis, were more vibration is likely to be present because of higher skiing speeds. The key dividing point in the line that I mention to every customer is our metal laminate construction. The Xplorer, Recon, and Crossfire all have two sheets of titanal metal. These layers of metal give us added responsiveness and torsional rigidity… and a more lively ride overall. All of the metal laminate skis also feature our MX binding system from Marker. There are too many features to discuss here today, but the key takeaway is that the binding to ski connection is better than ever with this model b/c of new, wider contact points in the heel and toe.

So what about the individual models? For a few years now, the Apache Recon has been our, “Flagship” model, and it has all the accolades to merit the title (the only two-time Ski Magazine Ski of the Year winner, and several other magazine best in test awards, etc.). The Recon is also a great starting point for discussing how the rest of the line comes together… it has all the bells and whistles mentioned above and comes with a very versatile 78mm waist. The waist width and sidecut of this ski lends itself to charging hard on all types of snow surfaces and we list it as our 50/50 ski (50% on piste and 50% off piste). If you’re looking for the same ride, with a slightly more versatile waist width, the Xplorer comes in with a little more girth under foot, at 84mm. It shares all the tech of the Recon, but with a slightly more soft snow orientation.
Crossfire is our hard snow charger, and it comes in at 74mm under foot, with the addition of vertical sidewall construction for even better performance on hard snow. If you’re looking for more of an every day cruiser with the big sweet spot that only comes minus metal laminate construction, take a look at the Raider or Interceptor. The Raider shares the exact same dimensions as the Recon, but comes without the two layers of metal and has an M2 binding system, as opposed to the more rigid MX system. The interceptor is simply the little brother to the Xplorer, just as the Raider is to the Recon and it shares the same technical differences. It offers a huge sweet spot and that same versatile 84mm waist width as the Xplorer.

With all this said and done, you need to demo some of these spectacular skis. Like Witold said in his article in the November 2009 issue of Peak Performance, K2 skis possess an incredible quality: either you will love them from the start or you will love them with time, and they will love you back and do for you very well whatever quality skier you are.

**Turn to Wisdom**

- The secret of achievement is to not let what you’re doing get to you before you get to it.
- Success comes in cans; failure comes in can’ts.
- Sometimes we are so busy adding up our troubles that we forget to count our blessings.
- Falling down doesn’t make you a failure, but staying down does.

**Thoughts for the Month**

- How many snowcats and how many snowmobiles does Mammoth Mtn., CA have?
- Should you put your ski boots on while sitting down or when standing up? Why?
• If a giant slalom racer makes a correcting movement by quickly moving arms up over their head and then back down, how much time does a move like that take and how far does the racer go during that time period? Any morals?

Answers are on the last page.

Announcements

• Lana Steen was a ski instructor at our mountain. Then she went to Beaver Creek, now she is back in this area. She married Ed Winebarger and had a baby boy born on Jan. 26. He was 9 lbs 4 oz and 21 inches long. Baby, named Knox Monroe, is now with parents at home. They all are doing well. Lana’s e-mail address is

“Lana Steen” veggiesonthevine@hotmail.com

Knox, welcome to the new world!

• Picture extravaganza is coming in the next issue of Peak Performance. So, if you have a “snowy” picture with a caption that you would like to submit, please send it to me at Kosmalaw@bellsouth.net.

• Kamp K2 is officially open for registration! Kamp K2 April 11–14 Ifen/Kleinwalsertal, Germany 300 Euro registration fee. At this time there’s no cap on the number of participants, but of course that could change depending on response. Go to www.kampk2.com for more details.

• Doug Washer recommends that we look at the skater found at:

http://www.youtube.com/watch?v=NXWK8FE5kuw

• Some interesting winter Olympic sites are:


• Important days to remember in February are: Greet Your Neighbor Day on Feb. 7; Valentine’s Day on Feb. 14; President’s Day on Feb. 15; and Mardi Gras, “Fat Tuesday,” the last day of the Carnival is on Feb. 16. You can find more information on the Carnival on: http://www.mardigrasneworleans.com/mardi_gras_2010.html
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 quality, you might be interested in my rear-entry Nordica Gransport Executive Ski Boots in size 28 – 28.5 or 27 – 27.5. I have two pairs for sale and almost new. Asking $375 for the larger boots and $195 for the smaller ones. Write me at kosmalaw@bellsouth.net, talk to me at the Ski/Snowboard School, or call at 828-719-6884.

Newsmakers

This no-man’s land actually has a name – Bjornrike, northern Sweden. Pictured is a warming hut visited by my sister Weneta Kosmala and her family in December 2009. Only Antarctica can beat this.

Answers: 74 snowcats and over 300 snowmobiles; standing up; 1/3 sec., 26 ft. – which is about the height of a 3-story building... this is a long ways to travel to improve the balance.