Hello to everyone! Can you believe it is already February? Don’t forget to do something special for all your Valentines. Are you having a good year thus far? Are you sticking to all your New Year’s resolutions? My New Year started at Mammoth Mountain, California, which, as their web site indicated, had more snow than any other ski area in the world. On January 1, I was the first one to walk into Footloose Sports Ski Shop to get my ski boots worked on, (see my article in this publication,) and my skiing was in for an improvement. Yes, we all go places and we need to be sure we represent our local mountain in the best possible way. It is indeed a small world. In fact, I met a young snowboarder from one of Mammoth’s Snowboard Schools who was asking me about our school at Sugar Mtn. He wants to move to this area because he loves the Appalachian Mountains. Also, there was a person in the Mammoth Mtn. lodge that saw my ASU Ski Team jacket and came up to talk. They know all about Sugar and in fact own some property in this area. When I came back home I was not in for a disappointment. Sugar Mountain sure is having a great winter season this year with lots of snow. I bet groomers of the mountain appreciate help from Mother Nature.

Here is something important. Please, read what follows because I want to make this perfectly clear. Even though Peak Performance is our Sugar Mtn. Ski/Snowboard School newsletter, its content is NOT endorsed by Sugar Mtn. Resort, Ski/Snowboard School Director, PSIA/AASI organization, nor any other agency. The information in these newsletters is not official nor approved by any higher authority. It is provided for you with the very best interest for the ski/snowboard industry and the public, but you need to use the information with your discretions. We are passionate about the sport and
print what we feel is proper and correct to the best of our knowledge.

As you have probably observed, each issue of Peak Performance has a section “Thoughts for the Month.” I used to receive countless e-mails asking for answers. To save time I started to elaborate on these “Thoughts” in the issue that followed. Please, keep in mind: these are my thoughts and you might have different ones. Each coin has two sides, so to speak. This brings me to the “Thoughts” pertaining to ideas of “parallel” presented in the December 2010 issue and elaborated on in the January 2011 issue. Let me explain where I am coming from and what my bottom line is.

For a moment, pretend that you are teaching George to play violin. It is one of those instruments that beginners feel awkward holding and their arms continually keep dropping down, and you continually ask George to lift them up. Then, one day George tells you that he saw a famous violinist playing violin with arms lower than you ask George to hold. What do you tell George? Or, you are teaching Liz how to swim using the butterfly stroke. You keep insisting on a correct movement of the arms and proper breathing. Then, one day Liz tells you that an Olympic swimmer was doing it differently. Now what do you tell Liz?

Did you ever have a beginning ski student who came to your class and tried really hard to turn the skis by putting them on high edges, performed unique moves with hips and squatted in a strange way to imitate Olympians that he saw on TV? Well, I have had plenty of them, including a number of those that were not even beginners any more and should know better. So, what do you say – skiing using such high edges is no good? Absurd!

In my opinion, all these examples are very similar to each other. There are certain norms that need to be taught first which establish good habits and are observed to be beneficial to student’s advancement. Later, when student becomes exceptionally proficient in the activity, they can start to alter the norm to fit their personal needs and desires. With this in mind, I think that skiers’ goals should be to ski keeping skis parallel, legs parallel to each other, and shoulders parallel to the slope. Once this technique is attained, skiers might be in a terrain and/or use dynamics which will need to alter this idea.

Since we, skiers are bombarded with the need to always keep legs parallel, to keep tracks parallel, and shoulders parallel to the slope, 2 things often happen. One, a skier rebels, throws the idea away and ultimately never reaches proficiency. Second result is that whenever we spot someone exhibiting nonparallel legs, tracks, or shoulders with the slope we pass a negative judgment. The idea of “parallel” in “Thoughts for the Month” was to present an awareness pertaining to this subject.

For another, perhaps inaccurate passing of judgment you might wish to reread the article entitled “Move or Position” in our September 2009 issue of Peak Performance. It is our hope that the publication of Peak Performance will help you in reaching your personal goals in snow sports advancement. Remember that all previous issues of Peak Performance are posted and downloadable from my web page found at

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

Please, write me at

Kosmalaw@bellsouth.net.

It is our sincere hope that this year 2011 will be the best year you have ever had. Happy Valentine’s Day to you all!

Main Course

Toasty Piggies

By Gordon Carr  
PSIA-E Alpine, Level II

Many of our instructors who have worked previously at other Western or New England resorts could write this article about keeping the feet warm on those cold days out on the snow. But I dare say in past years I have instructed at a resort renowned as brutally cold, even by local diehards… weeks in January where the high for the day can be –5 and the early morning, start of the day, “let’s make the first run and test the product” temperatures would be –15 to –20 below zero for days and days… I know about cold!
Anyhow, sitting in the locker room, removing boots at the end of the day, a while back, I heard people talking about their cold feet and holding their toes. So I offered a few suggestions. One of the ladies kindly suggested, “Hey, that sounds like a good topic for one of your articles in the newsletter.”, so here goes.

The ultimate solution for cold feet is commercial, battery powered, boot insole heating elements. There are several brands available, but I have had satisfaction with and am partial to “Hotronics.” They keep your feet warm down to –10 or –15 degrees IF you also practice some of the “tricks” to be described below. However there is a down side to battery packs: they are expensive, require recharging, the batteries have a limited lifetime number of recycle charges, and you have to be VERY gentle removing and inserting your boot liners for fear of bending repeatedly and breaking the battery-to-heating element wires. I’m on my third set of batteries, and fourth set of actual heating elements over the last 13 years; not too bad. The insole heating elements however are the cheapest part of the system, about $20 each, from the Reliable Racing catalogue as I recall. Google “alpine ski boot warmers” and you’ll get other leads on e-catalogue sources. Members of PSIA/AASI get discounts from many catalogue sites. The other downside is that you will have to alter your foot bed to embed the heating element and cut a hole in your boot liner to accommodate the battery wire plug. If this is your first set of “cookers” this is all a bit unnerving. You may want a professional installation the first time. But with all this, you do get to tape the wires to your liner with duct tape. With duct tape somewhere on your equipment you now qualify as an “ole pro, local, snow sport geezer” since no self respecting skier or boarder is without good old grey or black duct tape somewhere on their clothes, gear or body! It really isn’t all that cold here at Sugar Mountain and bitter cold doesn’t often last very long, so unless you have serious circulation problems you may want to try less expensive ways to keep the digits happy.

Chemical toe heaters are next in line and people do use them to their satisfaction. But the little packets under the toes and ball of your foot alter your stance and alignment AND if you can even get your foot into your boots with those pad stuck to your sox, your boots are TOO BIG. Witold just got Hotronics due to his poor blood circulation in his reconstructed leg and worried about just the heating element altering his stance, taking up too much room in his boots and being uncomfortable when pressuring his foot right into the lump and the actual heating elements are paper THIN! Even that tiny little lump under his toes made him shave down the boot board to sink in the heating element. But, on those one or two cold days, chemical heaters and an altered stance when just teaching on the Magic Carpet slope may be an OK solution.

The next mechanical methods to keep the feet warm are neoprene Boot Gloves and full jacket Boot Muffs. In the picture at right the glove is on the right and the full muff is on the left. Boot Gloves increase inside boot temp by a reported 10 degrees and are available from a variety of sources for around $28. Justin sometimes uses a pair… ask him about the effect they have on comfort. The Boot Muffs increase interior temp by a reported 20 degrees, and at sub-zero temps make boots mucho easier to remove after being on the slope several hours! (I have used the Glove under the Muff and my Heaters turned up “high” once at –30 degrees! Although my feet were warm, my wife just thought I was another old fool slope skunk!) The problem is that muffs were popular before rechargeable battery technology improved and made products like Hotronics popular. Sizes were limited when I finally tracked down several pair in 2002, but they run large and fortunately a “medium” fits up to a 325 mm boot. The muffs are now in no catalogue that I am aware of, but if you are determined and have a lot of time, try calling Reliable Racing catalogue supplier and plead with them to check in the old dusty boxes on their back shelves to see if any are left. Ditto with other alpine suppliers.

Now down to the nitty-gritty! The fundamental problem with keeping feet warm is MOISTURE. WET feet are COLD feet. During ski season, about once a week, I spray the soles of my feet (where you sweat) with Arrid Extra Dry Antiperspirant (lavender scented of course.) This significantly reduces moisture production and works if you are not allergic to spray antiperspirants (foot skin is different from underarm skin)… do a test on a toe or two on one foot before you do the “ole sheep dip routine!” Dust your feet AND sox with talcum powder each morning. It is hard to get the talc on your foot soles, but if you keep an old hand towel in a Ziploc bag with your talc and dust your feet over the towel the excess goes onto the towel and then you pat your foot sole on the towel and then ditto with your sox on… Voila! And the best, most luxurious trick saved for second last… at lunch time change into a fresh pair of DRY sox! Look at it this way. In the course of two days you use two pair of ski or board sox, each pair getting one day of use. If you change at lunch, the morning pair now has ½ day, and then the afternoon pair gets ½ day use. Dry them over night and ditto the
same schedule the 2nd day and the socks end up with each having 1 full day of usage. Ah! But the warm luxury of warm, dry sox at lunch is probably better than my peanut butter and CHERRY jelly sandwich at lunch! By the bye, CLEAN socks are warmer than ones used for days on end. Sweat in your sox dries each night, but in addition to moisture, each use puts body oil into the fabric (which does NOT evaporate), the fabric then conducts cold from your boot sole to your feet much more efficiently than clean fabric and promotes radiant cooling of your little piggies. Face it, those stiff, packed out stinky rags called “sox” after weeks of use DO NOT keep your feet warm.

Finally, and probably not necessary to use here in our locker room, but maybe an aide for home use is an over-night boot drying system of some kind. Electric boot dryers are expensive, but do work. If you start out each day with damp boots you are behind the toasty curve from the gitty-up! I happen to have had at our Maine cabin a forced air outlet at a spot convenient to charging Hotronic batteries AND providing a flow of warm (NOT HOT) air over the boot cuffs all night so that in the morning the liners were like a warm desert environment. Remember not to dry your boots too close to direct heat…. plastic can and does melt! Many a time I have seen guests on multiday lessons with rental boots partially melted from drying them close to fireplaces in rented condos! But the photo at right is an alternate to purchased commercial boot dryers and can be made for $3 or 4 dollars and a $12 dollar hair dryer. Just remember the hair dryer MUST be one with THREE heat settings, Cool, Warm, and Hot. USE ONLY COOL! The two (both Conair, from Wal-Mart) that I have produce 108 degree air on Cool. Too hot air from hairdryers melts glue in your insoles and can alter heat moldable liners if you have them. To be sure use a digital cooking thermometer to test output temperatures if you try this system. At the bottom of the vertical PVC tubes, cut the final 90 degree elbow off so that air flows to the toe of your boot. Also, the final PVC joint on top (no not that kind of joint) is a sleeve or union and must be adapted to the hairdryer nozzle. Make sure you buy a hairdryer with a round nozzle and take the hair dryer with you to Lowes and experiment… something in the plumbing section will work. My connection in the picture is a 2” PVC to threaded plug adapter… just right!

Anyhow, for what it is worth, these are some tried and true tricks to keep ‘em toasty! Get on out there when it is cold. That is when the snow “works best” in my opinion!

BE WARM AND STAY SAFE

My Boot Story Continues

By Witold Kosmala
PSIA-E Alpine, Level III
K2 Ambassador

What good are great performance skis/boards if you cannot talk to them and they do not understand your intentions? Without the last 20% of boot tweaking there is NO quality skiing. So, here is a continuation of my ski boot story from page 3 of the April 2010 issue of Peak Performance.

As many of you might remember, first half of the last season I skied in 2 different ski boots, where one of them was a rear-entry boot. My reconstructed leg was beginning to tolerate more external pressures and my inner desire was so great that I made myself put on 2 MATCHING performance boots. The tremendous pains and need for boot adjustments were a must. A year ago, in January 2010, I bought Nordica Dobermann Spitfire 120s at Footloose Sports Ski Shop in Mammoth, California, and my hopes for quality skiing sparked again. Upon the purchase, part owner of Footloose, Corty Lawrence (see his article in the November 2010 issue of Peak Performance) made for me custom foot beds, custom liners, re-screwed the right boot to adjust canting for my new bum leg, put in interior riser, etc. He did all he could in one day before I left Mammoth. (That was one year ago.) But, my reconstructed right leg created new angles and pressures on my foot creating many sensitive spots and some bone shifts, as well as making my nerves in my foot easy to pinch. Also, due to a horizontal (instead of vertical) muscle on my right shin due to so-called muscle flap, blood flow to my toes is severely re-
duced. Because of all that, Irwin Mallory of Sports and Expeditions Center at Hunter Mtn. in NY was tweaking my boots for 3 days last February, which included an exterior riser. He actually enabled me to keep those boots on my feet for an entire day of skiing. But, then I had to leave again, so a search for comfort and proper fit had to continue this season.

My trip on Dec. 29, 2010 back to Mammoth, CA made this possible. My daily ritual at Mammoth was to ski all day, then go to Footloose Sports for boot adjustments and later soak my feet for quicker recovery. This lasted for a week. Corty and his wonderful coworkers were determined to make my boots fit me perfectly, and I think that they got very close to that. They had many issues to resolve – raise the heel another 1 mm, eliminate numerous pressure points, help with pinched nerves, help with reduced blood circulation, and so on without sacrificing the performance of the boots.

While at Mammoth for over a week, I was retesting my abilities in skiing bumps, powder, trees and nearly verticals with treacherous drop-ins. If the boots do not fit properly, pain and lack of fit takes away from performance. And if the performance is not up to par, then serious things can happen. My message to you is this: your boots are the most important part of your equipment – make sure they permit you to do what you want (need) to do. The last dibble of improvement in the boot fit will make a BIG difference in the quality of your performance.

Corty and your employees at Footloose – thank you for bringing skiing back into my life by properly fitting my ski boots.

My Cross Country Skiing Adventure This Winter

By Doug Washer
PSIA-E Alpine, Level II
AASI-E Snowboard, Level I

Recently, I had to be in Minnesota for an extended business trip. With a weekend to myself, I decided to rent some cross country skiing, and experience a good old-fashioned Minnesota winter.

I’ve been cross country skiing (known as “Nordic” skiing, or “XC skiing”) here in local area for about 30 years. Mostly, I ski at the Moses Cone Estate trails in Blowing Rock. Another favorite is the Blue Ridge Parkway near the Linn Cove Viaduct when it is covered with snow. And I’ve also been up to trails at Roan Mountain State Park (Tennessee.) Quality cross country skiing in this area is limited, but we always have at least a small handful of spectacular ski days each winter.

Going skiing at night is especially fun, either with headlamps, or by the light of a full moon. Just watch out for wild possums.

Anyway, on my Minnesota trip, I rented some equipment on Saturday morning from an outdoor supply shop in downtown Minneapolis. The rental clerk was really helpful, and gave me some ideas on where to ski in the area. He also made sure I got a quality pair of boots and new skis, along with a fresh coat of some special glide wax.

One thing about Minnesota is that it is COLD in the winter – but this winter has been especially hard hit – with more snow than normal, and almost no let-up at all in single digit temps.

After picking up my rental skis, I drove a couple of miles to a very large downtown city park called Wirth Park. This park has many lakes, trails, gardens, some golf courses, and a city-owned snowboard and tubing area. The weather was about 5 degrees, but the sky was clear blue and sunny, and no wind. I skied a 4-mile loop, not really knowing where I was headed, since I didn’t carry a map. But eventually, after seeing most of the park, the trail
looked familiar again, and I got back to my rental car. (One amusing thing I saw was a XC skier pulling a baby carriage that was mounted on skis).

It was a new experience for me to ski on an “official” cross-country track. In our area here in N.C., you must blaze your own tracks, or you follow along on previous skier’s tracks that have usually been destroyed by the feet of hikers and dogs. At Wirth Park, the tracks were pristine, and it was easy to slide along without having your ankles rock from side to side from an uneven snow base.

I quickly learned that skiing in the pre-formed parallel tracks is for the “slow movers” (with a few exceptions – some folks were moving pretty fast, and I gave them the right-of-way as I stepped out of the track to let them pass me.) This I learned is called “classic” style. But the real athletes were skating with their skis, and they were using a groomed flat trail that adjoined the grooved tracks that I was using. These folks were going fast, and just kept skating with no slowing down. Up the hills and on the flats they skated. On the downside of the hills (there weren’t many hills in this park), most everyone did a “full tuck” (which is something I could do.)

The skating technique was very impressive, and occasionally I would leave the tracks, and try it myself. Not so good! After a little practice, I could skate, but the skis felt sluggish, and I never got a good rhythm going. I later noticed that the skater-skiers had very long poles (all cross country poles are longer than Alpine ski poles, but these super long skater poles are almost comical in appearance.) They also probably had much better gliding wax, and also most of them were quite a bit younger than me (but not all of them.)

Quite a few of the skiers who skated past me were wearing college team ski jackets, and were obviously practicing for the next competition. I was careful to look behind me before I pulled onto the skater track. I didn’t want to create a “sorry dude!” incident.

So I finished up my run, and felt great. That evening, I was staying at a downtown hotel, and decided to get some more exercise. Downtown Minneapolis is a very large and excellent walking city. So in zero degree weather I meandered the city blocks on foot, while taking in the sights, and eventually finding a restaurant where I could watch the NFL playoff game, and some (several) beers (Go Green Bay!).

Downtown Minneapolis has an interesting feature (which some other cities in Canada also have) in which almost all the buildings are interconnected by an enclosed “skywalk” system. This allows pedestrians to walk anywhere in the downtown without going outside. It looked interesting, but I stayed outside that evening, and experienced the weather head-on. Minneapolis is also known for a wide range of music clubs, along with many theaters and restaurants. It’s a cool city, really (no pun intended.)

On Sunday, I did some more walking around the downtown, and felt ready to try a little more cross-country activity, but preferably in an area less urban. So at the recommendation of the ski rental clerk, I drove a few miles northwest of the city center to a large state-run park called Elm Creek Natural Reserve.

This place took my cross-country ski experience to a whole new level!
The large and modern lodge area was really busy, with people outside taking cross-country lessons from instructors, as well as a snowboard and tubing area, with rope tows. (The world’s fastest rope tows, it looked like – they must have been going 25 miles per hour.) But I hit the trail, and within a couple of minutes I was entering some quiet and picturesque country. After a few more minutes, I was really alone in the wilderness (this is typically a major goal of my personal travels.)

The sky was overcast, and the temps were around 10 degrees, but no wind at all. I plodded along the grooved tracks, but occasionally would pull onto the skating track, and give it an energy burst for about 30 seconds. Too much work! I decided mostly to enjoy the scenery and just keep a good rhythm going. At the end of my tour, I had skied about 6 miles, and had completed a giant loop around a very big lake, and was back at the main lodge. A little disappointingly, no wildlife was seen along the trail, except for a few very cold birds.

During my ski experience, I saw that the tracks are groomed with a special attachment that is towed behind either a snowmobile, or a groomer cat (I saw some Pisten Bully groomers in the area, similar to our Sugar Mtn. machines, but a little smaller). The left side of the trail is groomed smooth and flat for skaters, and the right side has one pair of grooved tracks for “life in the slow lane.” Another thing is that the trails are one-way only – at least all the trails that I saw. And I didn’t see anyone going the wrong way.

Another interesting thing that I saw was red-jacketed ski patrollers on XC skis. As I was leaving the park, late in the afternoon, a couple of them looked like they were headed out to the trails to do an end-of-day “sweep.” Hopefully they didn’t find some skier who had fallen over in the track and got eaten by a bear.

If you haven’t yet tried XC skiing, give it a go! I highly recommend it. Just remember to put a little piece of ski wax in your pocket, in case the snow gets sticky.

Greetings Sugar Mountain and Friends

By Will Mauney
PSIA-E Alpine, Level II

While another ski season passes I hope everyone reading is enjoying yet another epic winter of skiing and snowboarding. It’s hard to believe that February is already upon us. We have but a few months left before the snow melts again. As most of you may know I departed from Sugar this season and headed West to ski and teach at Alpine Meadows Ski Resort in Lake Tahoe, California.

I have thoroughly enjoyed every second here at Alpine. From the top of the Summit chair you can see Lake Tahoe on one side and Squaw Valley Ski Resort on the other. Alpine Meadows is a locals mountain, remote and undeveloped. It’s much like Sugar in that there are only a few main buildings, a lodge with lockers and a cafeteria and a ski school/ski patrol building as well. It’s rarely crowded at Alpine and powder stashes can be found days after a storm. Alpine has a laid back, relaxed atmosphere with a super friendly staff of like-minded individuals (everyone loves snow). The ski school is broken up into several programs. There’s an amazing adaptive facility located at the bottom of the beginner lift. There are disabled or adaptive lessons daily at Alpine and the staff that work with these lessons are well-trained and very
knowledgeable. The Kids Camp is geared for 3-6 yr. olds and has its own magic carpet separate from the general public. Private and group lessons as well as kids ages 7–12 meet at the base while supervisors organize and split groups with instructors.

Each week I am training for the PSIA Level III Exam with a handful of other fantastic skiers. There’s a "tele-tuesday" clinic for telemark skiing as well as an in-house AASI Level 1 that I will attend this season as well. Some other fun facts about Alpine; if I carpool to the mountain, each person in the car gets a voucher for $4 good for anything on the mountain. They’ve recently offered chiropractic, acupuncture, and massage therapy services to employees in need. Also, we recently hosted a race called the Beaver Bowl Banzai that featured Daron Rahlves and a few hundred others in a skier-cross type race from top to bottom. Given the conditions at the time, i.e. ice and crud in mid-January, it was one of the craziest races I’ve ever witnessed. Lots of amazing close calls and some scary crashes on very technical off-piste terrain.

Teaching at Alpine has been really enjoyable. On weekends I coach a group of advanced local kids and usually get adult group and private lessons during the week. Everyone knows most beginners come into a lesson with fear and anxiety. With proper instruction on appropriate terrain and the ability to make your students laugh and learn you can quickly turn that fear into fun. Recently, I had a very cautious and fearful new skier in a group lesson eventually state, "This is so much fun, now I can see why people do this." As I laughed and agreed with him, I thought to myself that was the moment that his fear had turned into fun. Most students will have that "breakthrough" moment as they develop their skills and become confident enough to "let go" of the fear and enjoy the feeling of sliding on snow with control and ease. They are often happy to verbally express that switch in emotion and being a part of that memorable process is what makes snow sports instruction so enjoyable for me.

I hope everyone in NC is enjoying the snowfall. Although the Lake Tahoe area was hit hard early this season with four feet of snow in November, seven feet in seven days in December and a couple of 12 inch storms tossed in between just for fun… on Jan 1st it all stopped. Its been 22 days without snow here at Alpine and with blue skies and spring temps all day, everyday for the past three weeks. Fortunately we still have a ton of snow left and lots of great groomed terrain to keep us busy.

Cheers to everyone at Sugar and to those teaching at other resorts. To make the most of the last few months of winter go ski or ride as often as possible and share your passion with others by laughing, learning, and watching for that "breakthrough" moment when fear becomes fun and skiing or snowboarding becomes a lifelong activity.

Teaching Tips

Movement Analysis

By Ross McNeil
PSIA-E Alpine, Level II

As ski instructors we are constantly evaluating others skiing and attempting to implement positive change. When we first get a new client, where is the first place to look? One answer is movement analysis (or MA).

What is movement analysis in regards to skiing? MA is the process of watching, evaluating, and articulating several aspects of skiing. This includes watching what the skis are doing (ski performance), the body is doing (body performance), the effect of the body on the skis (cause and effect), and how to make the movements more ideal (prescription for change). Remember as you are doing movement analysis there are going to be movements that are less than ideal, and movements that are correct. We want to be able to describe BOTH.

The Foundation

Each turn skiers make, ideally consist of three phases. These phases are the initiation phase, the shaping phase and the
finish phase. Each phase should be equal in duration with no phase lasting longer or shorter than any other phase.

The initiation phase is the start of the turn. It’s the first third of the turn where the skis go from being on the old edges, then flat, and onto the new edges. The initiation phase starts with the first move to move the skis from the old edges to the flat ski. This section of the turn will end after 1/3 of the turn is complete. The shaping phase is the second third of the turn where the skis are on the highest edge angle. (To be specific the edge angles will build through the shaping phase and be highest near the end of the shaping phase, and then diminish into the finish phase. Note that on the steeps and some other terrain the highest edge angle will need to be at the end of the finishing phase of a turn in order to control speed by making a “check.”) This is often referred to as the “belly” of the turn. Finally the finish phase is that final third portion of the turn. This is the portion of the turn where those high edge angles begin to diminish until the skis are again flat on the snow.

For MA we will use the three phases of the turn to describe ski performance, body performance, cause and effect (the link between the body and skis), and prescription for change (or what do we change to make the movements more ideal.)

Also use the acronym D.I.R.T. to describe each type of movements. DIRT stands for Duration, Intensity, Rate and Timing. You can also use TIRD (pronounced turd) if you need a cheap laugh.

**Step One—Ski Performance**

The first place to look as ski instructors is ski performance. Ski performance is what the skis are doing on the snow. How are the skis interacting with the snow? To start skis have three basic abilities. The ability to bend, twist and rotate. This leads us to ask five questions when watching someone ski.

1. **What shape do the skis form?** Are they in a wedge, a wedge Christy (starting parallel and moving to parallel), or parallel?
2. **Do the skis maintain contact with the snow?** Often intermediate skiers will pick up one ski when starting a turn. Is over half of the ski coming off of the snow? Which ski is coming off of the snow?
3. **Are the skis bending from the center?** This can be a little tricky to spot. The easy way to tell is look where the snow is spraying from. A ski that is bending in the middle will spray from the entire ski. If a ski is bending from behind center spray will only come off of the tail of the ski. Is one ski bending more than another?
4. **Do the skis twist as the same rate of speed?** Are the legs twisting together or is one leg twisting faster than the other? Are the skis twisting in a manner that leave the skis converging (skis pointing towards each other), diverging (skis pointing away from each other) or are they remaining parallel?
5. **Are the skis on the same edge angles throughout the turn?** Is one ski on a higher edge angle than the other? Which ski is on a higher edge angle?

The trick is to pick one question and answer that question and describe what you see through all three phases of the turn. For example let’s take a wedge Christy skier and describe the twisting motion in the skis. In initiation phase of the turn the outside ski will be twisting at a higher rate of speed than the inside ski. This causes the skis to be in the shape of a wedge. Through the shaping phase of the turn the inside ski twist quicker than the outside causing the skis to match and become parallel. Through the finish phase the skis are twisting at the same rate allowing the skis to remain parallel through the completion of the turn.

That’s basic ski performance, now onto body performance.

**Body Performance**

After ski performance its onto looking at what the body is doing through the three phases of the turn. The body has three different skills. They include turning (rotary) movements, tipping (edging) movements, and flexion/extension (pressure) movements.

**Turning (rotary) Movements:** Rotary movements are what cause the skis to twist. Where are the rotary movements coming from? Are they coming from the lower half of the body (which is ideal) or are they coming from the whole body? Is the upper body counter rotated (where the hips and shoulders are countered or aligned down the hill oppose to square with the skis.) Remember it is ideal for the upper body to be countered at least by some amount (ideally by skiing
into counter oppose to actively twisting the upper half of the body.) Are the rotary movements happening at the same time (ideal) or is one leg rotating faster than another?

**Tipping (edging) Movements:** Tipping of the body is how we create edge angles with the skis. Are the edging movements getting created by just the lower half of the body (angulation, THIS IS IDEAL, edge angles should build from the ankles up.) Is the skier using their whole body, or banking into the turn (inclination), in order to create edge angles? Ideally movements to create edge angles start with the ankles and move to the hips. Ideally, in the shaping phase of the turn with the lower body will be creating the edge angles while the upper body remains more upright, making a faint “L” shape.

**Flexion/Extension (Pressure) Movements:** There are three types of pressure movements that we need to watch for.

1. **Front/Back Pressure (Fore/Aft):** Is the skier using fore/aft movements in order to stay in the center of the ski? Do the fore/aft movements correctly match the terrain or changes in terrain (moguls)?
2. **Foot/Foot pressure (Left/Right):** Is there a blend from pressure movements from foot to foot. Does the skier shift their pressure smoothly from one foot to another (ideal) or are the movements quick?
3. **Maintenance (Center of Mass moving closer and further from skis):** Is the skier using flexion and extension movements effectively to move from one set of edges to another? Are the flexion and extension movements coming from the ankle/knees/hips? Are the movements proportional in each joint (ideal) or is one joint flexing more than the others? Are the rate of the flexion extension movements equal in each joint (ideal) or does one joint flex/extend quicker than the others?

Let’s put all of body performance together and describe tipping (edging) movements throughout the three phases of a turn using the same wedge Christy skier. In the shaping phase of the turn the skier is starting to tip their outside leg. The inside leg is tipped inward to the body where the skis are on opposing edges. Through the middle of the shaping phase (when the skis come into the fall line) of the turn the inside leg is tipped to where the skis are on corresponding edges. Throughout the finishing phase of the turn the skis remain on corresponding edges. Tipping movements through all three phases of the turn are created with angulation (edge angles created by lower body.)

**Cause and Effect**

This is where MA begins to get fun. This is where we as ski instructors must determine what ski performance and body performances are ideal and what movements are real (real being a nice way of saying less than ideal.) Ask yourself what body movements are effecting ski performance. These answers will generally consist of movements that are efficient (or correct) and movements that are inefficient (less than desirable.)

It is easier to identify what the ski performance is, and relate that to a body performance. Remember to include all three phases of the turn.

Here are some examples of Cause and Effect:

**Example 1.**
Cause: The skier is tipping the lower half of the body (angulation) at equal rates through all three phases of the turn.
Effect: The skis are edging simultaneously. (This means that the skis are edging at the same time and also at the same rate. One ski should not have a higher edge angle than the other ski, instead they should match in every fashion.)

**Example 2.**
Cause: The outside leg is rotating faster than the inside leg during the initiation phase of the turn. During the shaping phase the inside leg begins to rotate quicker than the outside leg and catches up to the outside leg. Then the legs begin to rotate at the same speed during the bottom half of the shaping phase and through the finish phase.
Effect: The skis are not twisting on the snow at the same time causing the skier to ski in a wedge Christie.

**Example 3.**
Cause: The skier’s pressure is aft during the initiation and shaping phase of the turn due to over flexion in the knees and
hips and little flexion in the ankles. Through the finish phase of the turn the skier moves forward by flexing the ankles more than the knees and hips moving the body to the center of the ski. The skier then extends all joints equally to remain in the center of the ski.

Effect: The ski is bending from behind the center of the ski through the initiation and shaping phase of the turn. However the ski then bends from the center of the ski during the finish phase of the turn.

Prescription for Change
There is really no right or wrong answers when choosing what to work on with a skier. Think about what skill (pressure, rotary, edging) would do the most to improve a skier’s abilities. Is one skill hindering others from being ideal? Be able to justify your answer!

For example “I would work on maintenance pressure (up/down) to allow the skier to be able to effectively release their edges. This will allow the skier to release their edges simultaneously which would allow the skier to be able to also rotate and edge the skis at the same time.”

The Final Product
Finally practice describing ski performance, body performance, cause and effect and prescription in change in one coherent thought. A good way to practice is through videotape. Film other skiers and watch at full speed. Then go back and watch in slow motion to see if you were right or not. After practicing with slow motion practice at full speed. See if you can accurately describe skiers coming down the slopes from the chairlift. The Summit 1 (yellow chair) takes about thirteen minutes, see if you can pick out a skier on Lower Flying Mile and see how long you can talk about what that skier is doing. Not only will this make your lessons stronger and more meaningful, but clients will be more likely to come back when you can show you know what you are talking about. Remember your clients do not need to know all of this information, but it will allow you to create a better lesson in your short time. This is also great skill to take into any PSIA level one exam, and absolutely necessary for level’s two and three.

References:
- PSIA-Rocky Mountain Development Pathway (http://www.psia-rm.org/ed_materials/Alpine/IDP_Skiing_Standards.pdf)
- Clinics led by rocky mountain examiner Steve “Shredburg” Edburg.

This and That

Clicking Skis On

Here are recommended steps to follow in order to click skis onto the boots on the slope.

1. Get to a “good” spot on the slope to put your skis on. Try not to walk far on the slope and make sure you are not in a way of slope-traffic.
2. Separate the skis, if needed.
3. Put them across the fall line, that is across the slope.
4. Cock the bindings with your boot or a pole.
5. Get close to the downhill ski and brace yourself on your poles.
6. Scrape the snow off from the bottom of the boot which will be mounted onto the downhill ski. This can be done by scraping your boot on the rear piece of the binding, poking the bottom of your boot with the sharp tip of the
pole, or having someone else help. They can poke the snow and ice off your boot if you bend your leg sharply in your knee, like a horse.

7. Put the toe of the boot in first, place the heel on the rear binding, and then click it in by pushing down on the heel. If the snow is deep, this push down will not be effective since snow will go on top of the ski under your boot and the ski will dig in too deep in the tails. In those cases I would recommend lifting the tip of the ski gently with the front of the boot which is hooked under the front binding and sharply click in the back binding by pressing the tail of the ski against the snow in the back. This pressing can be very little, if any at all, depending how sharply you jerk the boot.

8. Put the uphill ski on next. If the downhill ski slides laterally down the hill, try pointing the knee of the downhill leg toward the mountain. (This pointing of the knee actually is a result of a small rotation in the ankle and hip. Knee cannot bend to the side.)

Loading a Chair Lift

Here are recommended steps to follow in order to load a double chair lift.

1. Find a partner and move up in line toward the loading area. Obey all commands given to you by lift attendants.
2. Remove pole straps from your wrists. Put top of poles in the palms of your hands. Push yourself forward by placing pole baskets near the tails of your skis and pushing against them. Slow down forward movement by placing baskets close to ski tips and resisting pressure.
3. Move up with your partner until the lift attendant tells you both to stop. This is when a chair will go right by you. Do not move forward until lift attendant gives you a go-ahead.
4. Quickly move up to the loading spot which is usually marked. Do not cross your skis, step on partner’s skis, drop a pole or something else. You and your partner should stop side by side with flat skis pointing uphill. If you on the left side, grab middle of both poles with the right hand and wait for the chair to arrive. (If you are on the right side, put poles in your left hand.)
5. Peek to your left if you are on the left side. When the chair touches our legs lift up your right hand with your poles and use your left hand to grab the post or hand rail and sit down. Try to sit down in such a way that your ski boots do not get caught under the chair, just in case the back of your boots is taller than the height of the chair. Sit close to your side of the chair.
6. Watch for a possible restraining bar that might be coming down. Don’t let it hit your arm or a knee. If there is a restraining bar, slowly pull it down. Place both poles together under your arm. Sit calmly, don’t bounce or swing. Don’t look back as clothing is slick and so is perhaps your seat. Do not smoke. Don’t throw anything down, including snow off of your skis. Do not bang skis together as they might come off.

Here are recommended steps to follow in order to unload from a double chair lift.

1. Follow the signs posted on lift towers. Raise a restraining bar when indicated. Make sure no clothing not equipment is caught on a chair.
2. Keep ski tips up as your chair approaches the unloading area.
3. Stand up at an indicated point. If that is the terminal point of the lift, the get-off is usually the highest point in that area. Push off of the seat with your free hand to stand up and to start sliding.
4. After you stand up lean forward against your boot cuffs. You can put your hands on your thighs if that helps. Make sure you and your partner keep skis on your own sides so no ski gets stepped on. Glide away from the chair. If you push with poles, make sure your poles are at an angle so that chair does not hit them and break them. Glide in parallel or wedge position to a spot out of the unloading zone. Stop and get reorganized before proceeding.

By Witold Kosmala
Feedback on Feedback

As instructors we aim to share our passion with skiing with various clients on a regular basis. Hopefully they will leave with a positive on-snow experience, maybe tip, and return for further lessons. Ideally though we want them to leave with the desire to ski or ride again. An easy way to ensure clients leave with a positive experience is phrasing feedback in a positive, more “like-a-ble” manner. See if you can give feedback without using words that associate with the “bad” or negative. Instead how come we never take the time to tell clients what they are doing that is right? This builds a positive atmosphere within the lesson where the client doesn’t feel completely incompetent when it comes to skiing. This will create a positive learning environment where clients are more apt to learning. From here why not describe what movements are making skiing harder for the client and then teach and demonstrate more ideal movements?

Enough about describing the wrong movements to clients, telling them what is incorrect in their skiing, and making them feel completely dumb on the snow. Instead let’s have clients come take lessons, learn what they are doing that is right, and some movements that will make skiing easier and ultimately more enjoyable in the long run (WITHOUT USING THE WORD “BAD”). After the lesson is over hopefully we can return to ski school, show off a nice tip, and all brag about how we are the best instructor on the mountain.

By Ross McNeil

Is it Dynamic?

Misconception of dynamic skiing: it is not how fast you ski or how much your upper body moves around. It is how soon your skis go on new edges after the transition, how high the edges are, and the path that skis take. Here is a quick self-test whether you are skiing dynamically. Look down toward your feet. They should be below you only in the transition. At other times you should only see snow while your feet are off to the side, and the path skis leave on the snow should be narrow. Dynamic skiers usually demonstrate efficiency in their moves resulting in a (usually) calm upper body.

By Witold Kosmala

Want to Keep it Slow?

There may be reasons why we might want to go down the hill slowly – heavy traffic, slope conditions, per request, personal desire. There are different ways one can descent down the hill on their equipment slowly: side slipping, turning with lots of skidding, turning on high edges, making hop turns, using medium radius turns, or using short radius turns. Of course, most dynamic way is to use any of the short radius turns that are available to us.

**Side slipping and very skidded turns:** This is an effective way if the slope is relatively steep and hard packed. Side-slipping is a good practice, especially if some pivots are included, or a *falling leaf* is exercised. Definitely good for learning *whirlybirds* (360-degree turns keeping the skis/boards on the snow.) Excessively skidded turns are rarely desirable and usually just demonstrate poor technique. Side-slipping and excessive skidding is usually not a preferred method of navigating down the hill as it removes the snow from the slope, exposes rocks and slicker surface.

**Hop turns:** We leave those to the hardy. No one wants to do too many of those, but they should definitely be in our repertoire.

**Medium radius turns:** To make them slow, be sure you do not start the next turn until your skis are perpendicular to the fall line, or perhaps just a touch more. That means, make the turns that look like the letter “C,” where the end of the turn has skis/boards going up the slope a little bit. Skiers, don’t release your edges until after the pole is planted in the transition. Throughout the turn keep your edges high and make a narrow track on the snow. Do relatively active steering of the skis and keep the weight on the balls of your feet. Hips should be relatively square with the hips creating stronger grip to the snow with the outside ski. Do not forget the toe action in your boots. Avoid traverses between turns.
Short radius turns: There are several short radius turns available for skiers (reaching short radius, retraction turns, or short swing; hop turns were already discussed,) and using any of them you will need to finish each turn in order to keep the speed down, just like in medium-radius turns. Since the skis will make a tight arc, more skidding will be expected than when making medium radius turns, but high edges should still be implemented and the track on the snow should be relatively narrow. If the slope is not extremely steep, the tips of the skis should turn to one side the same amount as the tails come out to the other side, meaning the pivot is under the ball of your foot. On the beginning of the turn, skier’s weight should be on the toes. This can be done by active anticipation or by pushing both feet back by dorsi-flexion. (You can think that the snow is sticky and the upper body moves first and then legs follow.) Blocking pole plant can help, as well as a firm check before the beginning of the next turn (not necessarily in the transition.) If the slope is steep, skiers should actively push the edges of the skis into the hill by pressing outside big toe into the corner of the boot and lifting the little toes. This will help shins to dig stronger into the slope and create less skid. In short radius turns hips should be more countered than in the medium radius turns.

Things to consider: Do not sit back on the skis, as they will “jet” forward and will be hard to control. Anticipate the acceleration when your skis go into a fall line. The same goes when skiing crud. When your skis go into other’s tracks they will accelerate. Back sides of moguls create an all of sudden steeper slope and make skiers go into the “back seat” making skis move quicker. Anticipate the beginning of each turn, especially on steeper slopes.

Never Enough about Safety

As the season progresses do not forget about safety. Hopefully you had a safe season thus far, but remember we get more courageous as the season goes on. We ski/ride faster, more dynamically. We take long swooping turns without perhaps looking back. We ride down and all of sudden turn toward the heel side without looking. We get closer to the trees to find better snow, more powder. We come into the lift line and want to make this one more last turn. Or we ski on closed slopes (no, we don’t), or come to a merging slope simply assuming that no one is coming (no, we don’t.) Perhaps we stop in the middle of a slope, or go faster than others and use them as human slalom. How about taking some air of a long awaited boulder? Sometimes nothing bad will happen, but then, wouldn’t it be better safe than sorry? Yes, accidents can happen to the best and to those that are most careful. Some will fall simply when standing and brake something. Our ASU Ski Team vice-president Tommy Penick clipped the lift tower with his left boot and broke his GS skis. Look at the photos. He was very fortunate that it was his ski that came apart and not his body. So, be careful to the very end of the season, and beyond.

Turn to Wisdom

- Skiing is not a matter of life and death… it is more important than that! (by Gordon Carr)
- Better a red face than a black heart.
- By associating with wise people you will become wise yourself.
- Never, never, never give up becoming a better skier/ rider.
**Peak Performance**

**Thoughts for the Month**

- What is *dorsi-flexion*, and when is it used in skiing or riding?
- After transition, what should come first: new edges or increased pressure?
- Should a skier start a new turn with the future inside ski or the future outside ski, and why?
- *Green* will be a special color next month. Why is that?

Elaborations on last month’s **Thoughts for the Month**.

- “Strong inside half” is basically initiating the new turn with the new inside portion of the body, that means: future inside knee, hip, shoulder, and head. Inside half leads in the turn initiation. This way the shoulders do not over-rotate. Inside half is actively leading, especially with the hip which is not passively trailing behind. Inside half actually says to the skier where they need to be going. Here is how you can tell if you have it: if someone pulls on your ski poles when standing below you and you can resist the pull and not slip, or when you can ski on one ski. If you cannot ski on one ski, you bank, lean, rotate your shoulders, drop your hips, and move your poling arm too much forward – you don’t have it.

- “Tip lead” in skiing refers to one ski tip being much in front of the other ski’s tip. This situation can be good, and in fact necessary, or it can be undesirable depending on the type of skiing performed and type of the terrain used. It usually occurs toward the end of a turn. Since ski tip lead should be only caused by hip’s counter-rotation and not a lazy ankle (that is, a lack of dorsi-flexion in the ankle), you should have it when:
  1. you ski very steep slope
  2. you make 180-degree very short radius turns or hops
  3. you cannot make it go away because your boots are too stiff, etc.

You should not have much of the ski tip lead when you:
  1. ski long radius turns
  2. ski on a gentle slope

- RED is the color of fire and blood, and often found in national flags. Often associated with energy, danger, power and strength. Due to red being very emotionally intense color, it enhances metabolism, increases breathing rate and raises blood pressure. It stimulates people to make quick decisions, so *Buy Now* and *Click Here* buttons on the internet are often in red. Since red is highly visible, stop lights are red, fire equipment is red, ski patrollers are wearing red. Red is used to indicate danger as well as energy, so sports cars are often red. And also – *Red Cross*. Few popular phrases with *red* in them are:
  1. caught red handed
  2. red in the face
  3. in the red (in debt)
  4. a red shirt freshman or rookie on a sports team
  5. athlete red-shirted their season (did not participate in their sport giving themselves an extra year of training without losing eligibility.)
  6. paint the town red

Color red also indicates passion, love and desire. So we have red lips, red nails, ladies in red, red hearts, red roses, etc. **Happy Valentine’s Day to Everyone!**

*Happy Valentine’s Day to Everyone!*
Announcements

- **PSIA/AASI events** registration deadline is very soon. Go to their web site and look at the Events Schedule. Don’t miss the registration deadline. And if you are taking an exam, talk to Len so he will sign your application form. Be sure to train religiously. We want to show our northern friends that the South skis just as good.

- **Ice castle** near the village of Jukkasjarvi, Sweden, is still taking reservations for ultimate northern experience. For more details see [http://www.icehotel.com/](http://www.icehotel.com/) and read our article in the next month’s Peak Performance.

- I, Justin read on [Epicski.com](http://www.epicski.com) that PSIA is allowing non-members access to some of the member only material (e.g. Interski info) until March 2011. Use [http://webportal.thesnowpros.org/interski/](http://webportal.thesnowpros.org/interski/) to gain access (you will need to create an account, but it is free.)

- **Spyder Sample Sale** at Sugar Mtn. is starting on February 24th. Huge savings on select Spyder winter items.

- **February is American Heart Month.** Heart disease (heart attack) is a major cause of disability and the leading cause of death in the United States. In 2009, approximately 785,000 Americans had a new coronary attack, and about 470,000 will have a recurrent attack. About every 25 seconds, an American will have a heart attack, and about one every minute will die from one.

  **Know the Signs and Symptoms:**

  1. **Chest discomfort.** Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes, or that the discomfort goes away and comes back. It can feel like uncomfortable pressure, squeezing, fullness, or pain.
  2. **Discomfort in other parts of the upper body.** Pain or discomfort in one or both arms, the back, neck, jaw, or stomach.
  3. **Shortness of breath.** May occur with or without chest discomfort.
  4. **Other signs.** These may include breaking out in a cold sweat, nausea, or lightheadedness.

  See [www.cdc.gov](http://www.cdc.gov) for more information.

---

Happy Valentine’s Day!

---

Peak Performance