From the Top

By Witold Kosmala
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Ski School Trainer
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Year 2014 – welcome!!! I hope the New Year found you in a good condition, and ready to start working according to your New Year’s resolutions. I hope you are not like me, who still has some of last year’s resolutions waiting for their turn. May this be absolutely the very best year you have had thus far. May it be filled with personal successes, which you can share with others. I hope this New Year fills your home with joy, your heart with love, and your life with laughter. (What does “success” mean to you?)

Holidays may be hard for some people, especially those who are missing some important concepts in life. I pray that if you are facing hardships, they will get soon resolved. So many people just take the next day for granted without expressing any thanks for receiving it. If 2014 never did come, then what? After all, we did not make it, so why should we get it?

My deepest apologies go to Gordon Carr. He submitted an article, which was published last month, but I forgot to attach all of the photos that went with the article. So, he instead of telling me who I am and where to go, he kindly revisits his article in this gazette attaching again all his photos. But, as I told Gordon in my apology letter, there are blessings in disguise. He finished the year 2013 and starts the New Year 2014 with a great article on a great subject. It will be remembered that much better if read multiple of times.

Keep the job by knowing the rules. Remember, every ski area has their own rules, so follow the rules at Sugar if you want to keep your job at Sugar. Let me just reiterate a few things that our Ski/Snowboard School Director Len Bauer said multiple times at group meetings.

- Don’t go to the Administration Office without Len, unless you are going to turn in your resignation letter.
- If you are expecting emergency messages from your car mechanic, sick child at home or a school nurse, present the situation to Len Bauer and he will tell you what you should and should not do. You don’t want to loose your job because you checked phone messages on the lift during your lesson, especially during family crisis.
• Point skis straight down and streamline down the hill, legal and respected at some ski areas, but not here. That would be a fast way out at Sugar.
• Don’t bring any technique enhancing vehicles to the lift. At some places they are encouraged, but not permitted at Sugar.
• Don’t jump! It was brought to my attention that our 2013/2014 official Sugar Mountain brochure pictures jumpers on pages 2 and 11, but it does not mean that if you do what they are doing you will be in the next season’s brochure. I recommend you do not jump at Sugar Mountain. For more detailed clarification talk to Len.

Know the rules. They vary from one ski area to another, just like rules for phone hand-texting while driving a car vary from State to State and even from location to location within a State. There are plenty of rules to know. Some of them you will just learn by word of mouth.

Our gazette, called Peak Performance is finishing its 5th year. Wow, where has the time gone? Many are envious of the great resource that this gazette provides, with wealth of fantastic articles and ideas to ponder over. For all you folk who find it helpful to reference earlier editions of this gazette, I am sure you have found the index of topics, listed by month and year, and previously published by Gordon Carr in the February 2013 edition, to be most helpful. The good news is that the Index will become even easier to use in the future! Just as all previous editions of the Peak Performance are available on my web site, www.mathsci.appstate.edu/~wak/,

starting in January 2014, the Index will be listed separately and individually on the web page rather than being embedded in an individual monthly edition. If you were a new reader of the gazette, or for the veteran staff, if you forgot the month in which the Index was published, effectively there was NO Index. By having a separate listing directly on my web page, and updated yearly by Gordon Carr, the Index will now be readily visible and user friendly! I strongly encourage you to journey onto my web page and to look up these publications posted on the bottom of the page and reread those great articles. They can easily be downloaded and they are set up for double sided printing. Also, please, don’t hesitate to write me at Kosmalaw@bellsouth.net. Remember that our intentions for Peak Performance are to promote the snow sports to the best of our abilities, so your ideas are most welcome! Lastly, keep in mind that there is no organization that overlooks our articles and ideas covered within. Skiing and riding is a dangerous sport and you do it at your own risk.

There is a saying: “Everybody makes mistakes, but only a few wise people learn from them.” My New Year’s wish for you is that you learn from all your mistakes.
I’m sure many of you noticed the “see picture at right” in my article last month and thought it should have said “see picture at right which doesn’t exist!” I thought I transmitted embedded pictures in the article but thru my usual Luddite attitude toward all these modern gadgets it didn’t happen… sorry.

But behold the wondrous complexity of all the muscles, tendons and ligaments which support our hip ball and socket structure (See picture at right).

Also notice the exercise machine, usually used and probably meant only to be used with feet firmly planted in a vertical position. However, the unique posture of the exercise chair in relation to the feet makes it possible to reproduce the windshield wiper motions of your feet and skis when sitting in the chair lift. Since it is an exercise machine you can now add weight and simulate forces generated during ski turns which engage and challenge all the hip support structures when you are rotating your legs, feet and skis by only (primarily) twisting the femur head in the hip socket. And, you can’t twist your pelvis because you are sitting on it. The two pictures, at right and below, illustrating this are compliments of the Paul H. Broyhill Wellness Center/Appalachian Regional Healthcare System.

The rotation of the feet, either left or right (and all the various combinations of movements of your feet to simulate aspects of skiing mentioned in my December, 2013 article) must be occurring because of rotation only by the femur head in the hip socket, so when adding weight to the machine you must start slowly and gently with the weight. You will
quickly come to realize whether or not hip socket rotation is your habitual way to twist your feet and skis on the slopes. If it isn’t, your hip socket support muscles will quickly let you know, so take it easy at first. Notice my feet… that is, as far as I can twist my femur head in the hip socket anymore… but that is enough…it will do. But slow and repeated used of this exercise machine, if available to you, will both strengthen muscles, stretch and toughen tendons and ligaments and will begin to make this locus of rotation your “go to” habitual movement when skiing. This exercise will develop “muscle memory” for those actions supporting dynamic skiing. You will definitely move up a notch in your dynamic skiing ability. And to keep in the theme from my December article…

BON APETITE

More than One Way to Get Down the Mountain

By Keith Li
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Roundtop Mountain Resort, PA
Trainer and Supervisor

It was a beautiful day at Sun Valley, and my buddies decided that after a hard morning of skiing, they were going to take the afternoon off. Not quite ready to quit, I wandered over to this guy who was setting up flags and asked him what he was selling. Chuck of FlySunValley was a paraglider who offered tandem flights off Baldy Peak. This sounded like a real adventure, so I paid the hefty fee and filled out all the forms promising not to sue if I was injured or worse.

We were ready to go. The harness system was pretty simple, and Chuck attached the front of his harness to the rear of mine. Chuck’s instructions were even simpler: “When I say NOW, you dig in your toes and run towards the edge.” So … with the canopy spread out on the snow behind us, we both dug in our toes and started leaning forward to get the sail to billow over our heads. Then, the unexpected happened: a gust of wind came up and blew us backward. There we were being dragged on our backs towards the lifts. Mentally, I prepared myself for a nasty accident as we would most certainly smash into something. Fortunately, the parasail collapsed and we slid to a stop. Chuck yelled that I did not dig in hard enough. Being thankful to have avoided injury, I did not argue.

The second attempt went like clockwork. We both dug in simultaneously, and the canopy billowed over our heads. Then, as if it had a mind of its own, the
parasail carried us over the edge. Because I was the first client of the day, I did not have a chance to watch someone else fly and did not know what to expect.

It was incredible! As the slopes fell away from us, we had an eagle’s eye view of the mountain. Chuck flew back and forth all over the area for about fifteen minutes.

We then headed towards the far parking lot to land. Chuck asked if I got airsick, and I responded that I did not. He then asked if I wanted to experience G’s on the way down. My answer was, “Of course!” So, he put us into a spiraling descent back to earth. We corkscrewed around and around before leveling out and smoothly touching down. Wow!

After a couple minutes of quiet to let my heart rate return to normal, I realized that what comes down must go up. That meant that I had to go back to the summit to get my skis. After a long walk to the base area and a couple of chair rides without skis on, I finally reached the top and retrieved my equipment. The final ski run seemed tame after my last descent through the air.

I don’t have any personal pictures of the experience but you can always find things on the web. Check out http://on.aol.com/video/paragliding-in-sun-valley--idaho-517808474 to see a snippet of the action. If you Google Sun Valley paragliding, you can see other videos.

Let the Games Begin

By Gordon Carr
PSIA-E Alpine, Level II

The Winter Olympic Games in Sochi, Russia are upon us. We will get to watch and enjoy world class athletes compete in all the winter sports. But I suspect you, whom the Peak Performance reaches, will be a bit more interested in the skiing and riding events. All the events however, are an exciting display of the prowess and athleticism of women and men from all over the world who are at the top of their game and love our glorious winter wonderland.

US television coverage has been, and will likely be, pretty comprehensive; so once every four years our winter athletes receive tremendous media attention and spectator interest. How sad that this media blitz is only quadrennial! How disappointing it is that all our Winter Olympic teams, who have trained vigorously and continuously, must wait for the Olympics every four years to get the attention and hype football, baseball, basketball, and increasingly soccer athletes get every season of every year. I know…I know…follow the money. And true, many of the winter events are a very difficult venue for spectators and thus have limited advertising draw. But the Alpine skiing events have World Cup racing venues every year! And I assert that there are few sports which require the athlete to be at absolute sustained peak performance (pardon the pun) over a relatively long period of performance time as is required for World Cup alpine downhillers. Sure, hitting a 90 mph fastball requires ultimate timing, coordination and skill all based upon tremendous athleticism and long training and experience. But the pitch is over almost instantly and the batter and pitcher take a break (to tug, scratch, pull, spit, fiddle, twitch, etc) before the next contest. Ditto for the football QB who precisely times his pass to hit a tight-end in a down and out pattern all the while being rushed by several thousand pounds of mean opponents intent upon squashing the QB flat as a bug! But the pass, complete or incomplete, takes seconds and then both teams go into a huddle and talk things over.

I mean no disrespect or diminution of ANY athlete who has committed years of training and hard work in pursuit of perfection. But I do speak with some obvious prejudice in favor of Alpine skiing events; I love skiing (and I don’t know much about other winter events). I am aware of Formula I auto racers, who at Le Mons have to be at their peak for at least an hour, on and off, for 24 hours at auto speeds which curl your eyelashes just to watch!

Peak Performance
And yes, any athlete, or musician, or any performer who has worked tirelessly to achieve perfection in performance in his or her endeavor is a remarkable person and has my undying admiration. But I am still enamored of downhillers.

And speaking of downhillers beyond the quadrennial Olympics, let’s look at some numbers I’ve thrown around in several previous articles. In alpine downhill speeds often exceed 80mph (The current issue of SKI magazine states that speeds can, at times, reach 100 mph, I dunno…I reckon that’s correct, but let’s stick with 80; that is plenty fast enough). At 80 mph, that is 422400 ft. per hour, 7040 ft. per minute, 117 ft. per second! I say all these numbers for a reason. And there is a reason TV and movies use slow-mo so often in shooting skiing and riding events and the “Warren Miller Extreme skiing and riding movies”…things happen just too fast in real time to see and appreciate what is going on in the scenes. I don’t know how many of you have had the experience to be physically close to an alpine downhill; I have, once. I was observing at a curve at the point of highest speed in the Tall Timber Classic downhill at Sugarloaf/USA in 2006. Bode Miller and (a young and upcoming) Ted Ligety were two of the more renowned participants. On this course, on this day, the highest speed was 70+ mph coming out of Narrow Gauge’s Headwall. To spectators at my point of observation on the course, it was a blind curve…you heard and felt the downhillers before you saw them. The snow pack actually vibrated lightly but perceptibly from the forces a 210 pound man (Bode) generated at 70 mph! Although he was not scrubbing speed by skidding, but was gliding with clean edge tracks, the ski carving over the snow made a rather loud noise as did the wind resistance of his race suit and poles. But if you blinked your eyes, you missed his presence…remember, 103 feet traveled per second at 70 mph! You felt vibration of the snow pack, heard some whooshing, saw a colorful blur, and he was gone; and if you turned to make a comment to a friend, he was almost out of sight downhill!! Interestingly, TV and Video of skiing, riding and other speed events somehow slows speed down thru some visual illusion. It also makes ski slopes seem less steep when viewed…Oh! Well!

But let’s get even more specific. The Lauberhorn Downhill at Wengen, Switzerland on the World Cup circuit is the oldest and longest of the alpine skiing downhill races. It is 2.75 miles long, with a 750 meter vertical drop (2440 feet). In 2010, it was won with a time of 2 min 35.31 seconds which translates into an average speed of 63.43 mph…over the 2.75 MILE course! Let’s do the numbers at 60 mph because it is easier and it’s close enough for government work. At 60 mph, that is 316800 feet per hour, 5280 ft per minute, 88 ft per second, 8.8 ft per 1/10 sec. So in 2012, the Lauberhorn was won by Beat Feuz (Switzerland) in 2:35.31 (2 minutes and 35.31 seconds), and the 5th place finisher was Bode Miller (US) in 2:36.08 (2 minutes and 36.08 seconds). That is 0.77 seconds difference between the 1st and 5th place finishers. If you do the math that is about 67 feet difference over 2.75 MILES between the 1st and 5th places. There were 3 other skiers between 1st and 5th contained in that 67 feet (about the length of 3 of my red trucks) That sounds like a lot of distance, but remember these fellers are traveling 93 feet in ONE SECOND! Unbelievable! And even more unbelievable is that within a season there is often a consistence in relative finish order among these athletes and with these same close finishes. To stay ahead consistently at 60+ mph speeds over 2 + mile courses during the World Cup tour is a mark of fine-tuned athleticism, concentration, and ability to manage different courses and snow conditions! And the United States has men and women athletes who compete successfully at this level! The US has come to increasingly be a force to contend with in both the women’s and men’s events. The most recent SKI magazine has an interesting article about the rise in dominance of the US Ski Team from 1998 when Picabo Street won the only ski medal in those Olympic Games (Gold – Super G) to the results of the 2010 winter Olympics when the US Team brought home 8 medals. Also notably Seth Wescott of Boarder Cross fame has won Gold in the only two Olympic Games which had this event. I don’t know if he’ll do it again, but I do know his BBQ joint, The Rack, on Sugarloaf’s access road smokes up a mean BBQ Baby Back Rib.

Now to my beef (if you will again pardon the pun). The Olympics are a great test of our winter athletes. But remember these young people are racing every year in the World Cup, arguably a more sustained year-in and
year-out test of athletic prowess. It is hard to understand why our American racers are not accorded the same celebrity status which European racers are given. Winning ski racers in Europe are “heroes and heroines” and viewed as “rock star celebs” by their countries. Hermann Maier, Stephan Eberharter, Benjamin Raich, Franz Klammer for Austria; Alberto Tomba for Italy, and at the top of the heap…with the most World Cup 1st place finishes, Ingemar Stenmark of Sweden with 86 top podium wins…one and all are held dear by their countries. Austria is the only country with more than one racer in the all time top 10 finishers, the four stars mentioned above, (so far)….EXCEPT FOR the good old US of A. We have Bode Miller in 7th place with 33 World Cup 1st place finishes AND Phil Mahre in 9th place with 27 1st place finishes and ahead of the great Austrian Franz Klammer in 10th place with 26 wins). Plus, Bode was the first to win 1st place finishes in all five of the race events (downhill, Super G, giant slalom, slalom, and combined)! I think Bode is not given his proper due, can still move up the list, and is likely to be a force to contend with at the up-coming Olympics still! Many Americans don’t even recognize the Mahre twin’s name anymore. But ask any Italian about Alberto Tomba or any Austrian about the “Hermannator”…see if you get an answer.

But it is in the Women’s alpine world where the US team and Lindsey Vonn cast the long shadow! Lindsey is the most winning female alpine racer EVER for the US with 59 1st place World Cup wins only 3 behind the top female racer, Annamarie Moser-Proll of Austria with 62 top World Cup finishes. Moser-Proll retired in 1980, but Lindsey Vonn is not just currently active, but is at the top of her game. She is coming off a knee injury, but according to news reports, she is back on the race circuit and barring any further injury is very likely to top Moser-Proll and become the most winning female racer in the world, ever! She will have attained the “Ingmar Stenmark” status of having a record not likely to be toppled. And yet, prior to the Olympic hoopla, most news coverage relegated her to “she is the new companion of Tiger Woods”. Her achievements mean much more than that…she is not just somebody’s “arm candy”! The coverage could equally have been… “That golfing fellow was seen with the Great American Alpine Skier, Lindsey Vonn!” Tiger Woods is also a champion, but I take umbrage not just at this particular slight, but at the 3 years of media silence about most all winter sporting events and athletes.

Don’t misunderstand me and believe only the names mentioned in my article are the “champions”. Any athlete who even competes in the Olympics and World Cup arenas is a “champion” with commitment and dedication to training and sacrifice and with skills and abilities in execution far beyond us mere mortals. They are ALL to be celebrated for their dedication to our winter sports.

But there you are. Winter Sports just aren’t au courant in American media, and our tremendously powerful and winning young athletes only get their deserved coverage in the Olympic years. Also, I think we are pretty dominant in the riding world, the half pipe with the Flying Tomato, Boarder-cross with Seth Wescott, and Free style and that is great! But what American off the street can rattle off a name when asked, “Who is the best skier (rider, half pipe, free style…etc) like a Swede or Austrian can do if asked? Wishing it were different…and the best of wishes to ALL our American winter Olympians! Now on the home front:

THINK SAFETY
Health Course

Dry Lips

By Witold Kosmala
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Ski School Trainer

All outdoor lovers suffer at one time or another from dry lips, especially in the wintertime. The natural instinct tells us to lick them in order to moisten them. But, if you were to think about it just a bit, you might think otherwise because you know that after soaking your body in a hot tub (or cool tub) you come out with dry skin, instead of a moistened one.

Saliva is the worse enemy for dry lips. It contains various digestive enzymes and will actually try to digest the lip skin, called stratum corneum. (This is the layer of skin that peels off after sunburn.) Saliva will cause inflammation in the corners of the mouth, it will make lips dry, red and painful. Dry lips shrink and thus may split, bleed and be very painful. Contrary to popular belief, licking lips to moisten them will make them drier and more chapped. Research shows that licking lips wears the stratum corneum down, leaving them vulnerable to environmental exposure, (like dry air), to chemicals and germs.

But, even when lips are subjected to just clean water (like any part of human body), why do they dry out? The easiest way to answer this is to picture bread that is in a plastic bag in order for it not to dry out. Plastic bag plays the role of stratum corneum, as the outer layer of the skin. It is the moisture inside the bag that keeps the bread fresh, not what is on the outside. But, if the bag (meaning skin’s outer layer) deteriorates, like due to sun, chemicals in the water, soaps, saliva, dry air, wind, aging, germs, etc., bread dries out, that is, skin’s lower layers lose water and oils that keep the skin soft and pliable.

To keep lips from drying out, put moisture into them from inside and not from outside. If lips are dry, they are dehydrated. Your body needs water! Applying water from the outside just makes the situation worse. For one, there are still chemicals in it, and then when it dries on the skin it destroys its outer layer. There are temporary lip balms that can be used to soothe chapped lips, but they do not hydrate them. They actually seal water away from the skin, just like wax on your car keeps water off.

Dry-Land Training

Half-moons

By Witold Kosmala
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Stand on loose dirt, on sand or snow on both feet about 8 to 10 inches apart. Now, put about 80% of your weight on one leg and move the other foot in a circular motion as indicated on the photos. Only leg in the hip socket should rotate. You can circle in two different directions. Next, change feet and do the same 2 circular arcs so that all 4 combinations will be equally practiced. The mark that is left on the ground is called a half-moon. The movements that produce half-moons can be good and can be bad.

Good points of half-moons:

They indicate movement in the direction of travel, which is already one good point. They give a skier a feel of rotation of the foot. They wake up static feet and rotate extremities without rotating hips. They make skier aware
of the big toe movement toward the side of the boot and the feel of how the toes should steer the skis. Even the shin needs to pressure the boot anywhere between 10 and 2 o’clock, if the lower leg was “placed” through the center of an analog clock, where 12 o’clock points straight forward. They make the skier realize that to turn, they might need to actually turn their feet instead of just stand on their equipment and rely on only pressuring skis in order to turn.

In addition, you can see from the pictures that the steered track is tilted, which indicates that the leg, which made it, had to be tilted. This means that the knee was pointing in the direction of travel.

**Bad points of half-moons:**

They might be performed incorrectly by:

- rotating entire body instead of only leg in the hip socket
- twisting in the spine instead of leg twisting in the hip socket
- by swinging the heel off to the side too much.
Half-moons might promote body over-rotation. Furthermore, they may promote sitting back because when moving foot forward, with fear of getting toes stuck in the ground, you might lift the toes resulting in the excessive pressure on the heels. In fact, the similar can happen when you are moving foot back: in order not to get heel dig in, too much pressure might be placed on the toes.

Important comments:

- It is important to notice that when skiing, both feet need to perform correct half-moons at the same time.
- Even more importantly, notice that when you are performing half-moons when standing, you end up on the heel. This should indicate that when you perform half-moons when skiing, you will end up in the “back seat.” Thus, to successfully navigate down the hill, you need to do more then just half-moons in order to make turns.
- When skiing, the outside leg moves a little quicker then the inside one. The sensation to the skier is that the inside leg actually moves “back” some so that it gets tucked under the body as much as the ski boot’s flex permits. Otherwise, an unwanted excessive ski tip lead results.

Training

Moving forward – on-snow portion

By Witold Kosmala
PSIA-E Alpine, Level III
Ski School Trainer

Moving forward when skiing is more complicated then on dry land because it is counter-intuitive and skis keep sliding away from under you. A proper fore/aft stance on skis is one of the most difficult skills to master. Also, it needs to be pointed out that moving body forward is not always the right thing to do. The same goes for moving forward and staying there. However, in most part there are skiers who religiously are in the back seat and they desperately need to move to a more forward home stance. The ideal skiing calls for constant moves forward from the home position and back to the home position, or perhaps just a touch back from that. Most often pressure exerted on the foot should be from just the front of the heel (back of the arch) to the toes. There are instances when you might want to be much further back then that, but that will be for a very short time. It is also important to know that if you are in the back seat, your thighs are working overtime, you are putting strain on ACL and any fall backwards can damage ACL. As you may have read in March and October 2013 issues of Peak Performance, KneeBindings might be your ACL’s life-saver.

Moving the upper body forward on your skis can be accomplished in two ways: moving whole body from hips up forward, or moving legs backward. These are two different moves that sometimes accomplish the same task. In the forward movement of the body skier usually experiences acceleration, extending the body releases muscle tightness allowing them to get a little more blood flow, and gives skier a chance to take a nice breath. The drawbacks are that it is sometimes very difficult to push the upper body forward while the lower body is sliding in basically the same direction. Moving feet back is much easier and quicker, but often leaves the skier in a flexed stance. This movement back is mostly performed with hamstrings (against a strong core,) which more often then not are weak.

Fortunately, there are lots of drills to improve the ability of moving forward, and staying there if need be. You should practice forward movement before you even get to the slopes. Perhaps you might like to reread our suggestions printed in the December 2013 issue of Peak Performance. Few quick ideas were:

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• Stand up onto your toes
• Squeeze the butt muscles
• Hold the coin between butt cheeks
• Hug a large lady
• Pretend you are on a rocking horse and rocking forward
• Pretend you are running up or down a hill or flight of stairs
• Walk on your toes

Here are a few static drills when you get on skis:

1. Put skis on and move the entire body fore and aft. When you are in the correct “home position” your thighs should be soft. You do not need to move back much before they become stiff. In fact, if you were to do this exercise in your living room, do it in shorts so that you can see your bare thighs. Just a touch back and they start to flex.

Firm thighs. My finger pokes a firm muscle and does not indent it. My butt hangs out behind the rear ski binding.

Soft thighs. My finger pokes a soft muscle and sinks into it. The line perpendicular to the ski from the back of my butt should be no further back then the back of the boot. Here I am properly lined up over my base of support.
2. Bull-fighter’s position (this is to feel where the body needs to be when in a forward position). In the picture on the right, my brother Andrzej is in the process of performing bull-fighter’s turn resisting forces acting on him. In normal skiing he would not be this much forward.

3. It is important to start the proper stance with good ankle flex. Look at the photo on the left, where the right ski pole touches my knee and is perpendicular to the ski. Past that point the boot should feel very stiff. In addition, shins should be parallel to your back. This way, knees are not excessively bend. Weight should be on the balls of your feet.

4. Skate on a flat terrain (this drill moves the body constantly forward in a tame environment.)

5. Skate up a gentle slope.

   My brother Andrzej is poling himself up the hill using herringbone approach. His body is forward.

6. Take a straight run down the hill. (If you do not move forward, skis will run away from you and make your run very unstable. With pressure on the tails, skis will want to catch an edge due to side-cut.)
7. Ski down the hill pretending there is a strong wind blowing up the hill and into your face. (If you do not move forward, the wind will blow you back.)

8. Ski down the hill pretending you are pushing a big snowball in front of you. (We said snowball because it will create a lot of friction, so you have to push forward pretty hard.)

9. Take a straight run down a slope in a tuck position. Then extend your body, i.e. make your body long. (Sometimes we think of it as “standing up.” In fact, this last term is so misleading – standing up. It is NOT a vertical movement along a plumb line, which is parallel to the trees. It is a movement along the perpendicular line to the slope. If you actually move along this line perpendicular to the slope, the sensation is that you are moving forward.)

10. Traverse (in both directions) the slope moving body forward and then back several times. (This will give you a feeling of where you are and how to change that position.)

11. Traverse (in both directions) moving feet forward and then back several times. (You can compare this drill with the previous and observe that moving feet with less mass is easier then the whole body. Also, with moving feet, you can use stable upper body for bracing against. Use core muscles to slide feet back and forth.)

12. Ski straight down a gentle slope moving torso forward and then back. (Good drill to master so you can recover when by chance you get into back seat.)

13. Ski straight down a gentle slope moving feet forward and then back.

14. Traverse a gentle slope while flexing and extending your body. Keep shins pressed against boot cuffs at all times. (Gentle slope so that both legs are flexing about the same amount. Do not bend too much in your hips. Due to firm boots, you will not be able to flex very much. Some instructors loosen their boot buckles for this drill so that they will be able to flex boot more in order for student to see a larger motion. Student most-likely has a softer boot, so they should be able to imitate with boots as they have them.)

15. Traverse a slope on both skis and then turn up the hill without skidding. (You should travel a couple of feet up the hill before you stop. If you have problem with gaining elevation, then you are most likely skidding out the tails because you are in the back seat.)

16. “J” turns. Same as above, but start straight down the fall line. (In this drill you are to turn up the hill some and gain elevation. If you do not, then you ended up on the heels when you started to turn.)

17. Ski backwards and feel pressure on the boot cuffs. (You are in a forward position.)

18. Keep pressuring your toes down to the foodbed. Keep shins pressuring against the boot cuffs. Hold arms out, to the side so they are just barely in peripheral vision out of your goggles, and keep elbows in front of torso. These are signs of good basic stance.

19. Pretend you ski with feet directly through the analog clocks where 12 o’clock points straight forward. Now ski with only pressuring boots between 10 and 2 o’clock. (See photo on page 9.)

20. Keep thighs high, that is, stand up tall. It will move your upper body more forward and more perpendicular to the slope.

21. In a transition, move torso toward the fall line, not away.

22. Ski from sunny part of the slope to shady part, where skis automatically accelerate. Move forward as soon as skis speed up so you don’t fall backwards.

23. Ski into snow pile made by a snow gun. Soft (and perhaps sticky) snow will automatically move you forward. You might even kiss your ski tips or make a summersault as a result of sudden move forward.
24. Do little bunny hops along a medium radius turn. Ski should come off of the snow about an inch. (If your body is not forward enough, you will not be able to hop up. Expect ski acceleration as you point them down the hill. This is when you really need to move forward.)

25. Do the previous drill, but now shuffle feet when turning instead of jumping.

26. Try showing the bottom of your skis to the skier behind you. Or, equivalently, try showing the graphics of your skis to spectators below you.

27. Think that the tails are “above” your head when skiing steeper slopes.

28. Ski only on a left ski. When you turn left and are coming to transition, you drag the tail of the right ski. In the transition when turning left ends and the right turn begins, you start to drag tips of the right ski. As you start coming to the next transition, you again start dragging tails. In the transition you again switch to dragging tips. Then, you switch legs and perform the same exercise as illustrated. Does this drill remind you of Bellows Turns? (See the drill 29 below.)

![Diagram of skiing technique](image)

The moment when you move in the transition to make the ski drag the tips on the snow, you moved forward. Don’t forget to switch legs and do the same drill on the other leg.

29. Do Bellows Turns. (Note that in this drill only ski tips of the inside ski drag on the snow, unlike in the drill above. Unfortunately, this drill promotes a whole body rotation, so perform these turns with moderation. We will discuss these in a future issue of *Peak Performance*.)

30. Stand across a steep slope. In order to make the next turn, after you start traversing down a bit, you need to move forward, big time.

31. Hang on to “C” turns a little longer. Don’t start the next turn until you go up a hill just a bit in the transition. Then, project to the next turn without a hop.

*Peak Performance*
32. In transition hop, pivot and land in the fall line. This is called a hop-to-shape drill, a form of a leaper. (If you do not land flat on the snow in the forward position, your skis will jet and you will have hard time making the next turn, or you will simply fall back onto your ski tails. Watch that ACL.)

33. Do leapers. (We will discuss these in a future issue of Peak Performance.)

34. Do hockey links. (We will discuss these in a future issue of Peak Performance.)

35. Ski skidded turns until you get to a designated spot on the snow at which you start making railroad tracks.

36. Plant poles while skiing. Planting poles will pull you more forward, (unless they are blocking pole plants.) Reach out with your pole basket.

37. Ski with shorter poles. Shorter poles will pull you forward because you will need to reach further to touch the snow.

38. In the transition, move uphill pole grip over the lower ski.

39. Make as many short swing turns as possible, (not hops), in a designated distance. (More forward you are, more steered turns you will make because your skis will be relatively flat on the snow.)

40. Do lane changes. (It is very important to move forward at the end of the long turn, right as the short turn starts. Otherwise, as soon as you point the skis down the hill, they will jet and put you in the back seat. We will discuss these in a future issue of Peak Performance.)

41. Do 1,000 steps. (We will discuss these in a future issue of Peak Performance.)

42. Do 1,000 skates. (We will discuss these in a future issue of Peak Performance.)

43. Do White Pass Turns. (We will discuss these in a future issue of Peak Performance.)

44. Do pivot slips. (We will discuss these in a future issue of Peak Performance.)

45. Skate across a beginner or intermediate slope and then turn on the inside leg. See illustration.
46. Do Pain-in-the-“S” turns. (We will discuss these in a future issue of Peak Performance.)
47. Ski steep terrain controlling your speed.
48. Ski moguls controlling your speed.
49. Ski on one ski at a time.

There are so many drills that try to accomplish the “move forward” task, that I am sure I am forgetting to mention many of them. But, the above-mentioned drills should keep you going for a while.

Turn to Wisdom

- Good friends are hard to find, harder to leave, and impossible to forget.
- Youth is when you’re allowed to stay up late on New Year’s Eve. Middle age is when you’re forced to.
- An optimist stays up until midnight to see the New Year in. A pessimist stays up to make sure the old year leaves.
- Many people look forward to the New Year for a new start on old habits.
- The pessimist sees difficulty in every opportunity. The optimist sees the opportunity in every difficulty.
- Yesterday is but today’s memory, and tomorrow is today’s dream.
- Tomorrow hopes we have learned something from yesterday.

Thoughts for the Month

- On an intermediate slope, in a transition, what is the difference in skier’s move to perform a White Pass turn and skier’s move to begin park-n-ride?
- In teaching, what is referred to as “guided discovery?”
- What is the difference between an edge angle and a platform angle?
- In skiing, what causes the pictured outcome?

Elaborations on last month’s Thoughts for the Month.

Question: In skiing, what are half-moons? Are they good to do or not?
Answer: See page 8.

Question: What is a gradient? Does it measure the angle at which a surface points downwards?
Answer: If you are going to use a technical term, then you should use it properly; or else use a commonly Peak Performance
accepted terminology instead. Being a mathematician by profession, and \textit{gradient} being a mathematical term, it is irritating to hear people use it freely to represent whatever they think it might represent. So, let’s get it straight. Gradient is a vector which points in the direction of the steepest ascent from the given location. It specifies a direction up which is the steepest; not down, and not its pitch. It is true that gradient can be used to find all those other things, but those other things are NOT called gradient. Enough said.

**Question:** Where should you pressure your ski boots, if at all?

**Answer:** The answer is simple – pressure wherever you need to in order to accomplish a task at hand. OK, so it sounds like a smart-aleck answer, but correct.

Pretend you ski with feet directly through the analog clocks where 12 o’clock points straight forward. On a smooth slope, as you turn from side to side, pressure should move roughly from 2 to 10 o’clock or from 10 to 2 o’clock. See the photo. Of course, if less turning takes place, you should stay closer to the 12 o’clock hour.

You should not push at 3 or 9 o’clock if you are steering into a fall line because the ski will accelerate and put you in the back seat. These hours, however work OK with side-slippering. Note that I said “OK” and not “good” because it is your foot that needs to create the pressure and sometimes it does not need to involve the lower leg. Furthermore, these hours can sometimes be used when performing railroad tracks when a certain turn shape is desired.

The remaining hours on the clock are rarely used in “normal” skiing. You might want to press back of the book right before a sharp rise or while performing certain drills. Do not confuse pressuring boot with pressuring the foot. They are 2 different things. Some skiers might pressure back of the boot when instead they should perhaps be pressuring their heel. The same goes for pressuring \textit{foot} between 10 and 2 o’clock versus pressuring the \textit{boot} between these hours. Also, the amounts of pressure also varies depending on the need. Wow, skiing is just so hard.

**Question:** How should you measure correct boot’s forward lean?

**Answer:** Put your pole vertically in the crack between the front binding and the boot. Does your knee touch the pole while exhibiting average pressure on it? If so, your boot has a correct forward lean. See the photo.

**Question:** What effect does a ski boot with excessive forward lean have on a skier?

**Answer:** Amazingly enough, if your boots have too much forward lean, you will end up skiing being too much in the back seat. If the boot has too much forward lean, it will act very similar to a boot which is very soft, with low flex index. In order not to fall flat on your face, you will automatically pressure your heel. Without solid boot cuff on which you can support your body, you will have to straighten out you ankles, otherwise they will have to hold you up instead of boots. But, ankles are not strong enough to hold you up and to resist pressures that come at you as you are navigating...
down the slope. The result is: sitting back, or squatted position, both short legs – stuff like that. Basically – not good. Even for teaching, personally, I prefer stiff boot because it gives me something to lean against. In soft boots, you have no support. It has to be done muscularly.

**Question:** What effect does a very soft ski boot, low flex index, have on a skier?

**Answer:** See the answer to the previous question.

**Question:** If your ski coach tells you not to tuck, what does it mean to you?

**Answer:** If your ski coach tells you not to tuck, then: Do not tuck! There might be many reasons why coach might give you this command. Maybe your tuck is not good enough to bother with. Maybe your tuck will mess up the way you ski around the last gate before you tuck. Maybe your coach knows that you do not know how to get out of your tuck. That is, maybe you extend vertically instead of moving body forward. Maybe you were told not to tuck because you normally get out of the tuck too late and too close to the next gate. Maybe coach wants to test you and see if you obey. When coach has a free moment, you can always ask for further explanations.

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**Pet of the Month**

Meet Suzie -Q aka "Cucers", a fuzzy long eared keeper of the herd. Our fearless security guard has lightening fast hooves and jaws to insure instant terror in the most brazen coyote. She does her job very well.

*By Katherine Natali*
Gear of the Year

Throw a couple dozen testers at a boot or a ski, and you’re likely to get differing opinions, sometimes inexplicably divergent. So when consensus happens, you know you’ve got a winner. These picks reflect that process, with extra points awarded for freshness and innovation. Every year, stuff gets better. Meet the new benchmarks. By Joe Cutts

K2
Spyne, Spyre, Pinnacle: “Rookie Sensations”

K2 needed a boot. The easy route: acquire an existing brand and relaunch it. Instead K2 chose to build one from the ground up. Given the daunting complexities of boot design and manufacturing, it’s an ambitious undertaking, fraught with peril. K2 understood only too well from past failure. That makes the success of K2’s 2014 launch all the more laudable. The freshman-year offering is impressively broad: three all-mountain Spyne models for men, three Spyrre for women, and two hike-ready Pinnacle for adventurous freeriders. There are thoughtful and effective technologies (rivet-free attachment of cuff and shell; a slick hike feature), and even our pickiest testers were impressed with the performance. Well done.