Altitude Sickness
Skiers Suffer
Bull-fighter’s Turns

Itchy Hats
Hypothermia
Bellows Turns
Contents

Page 4  Skiers Suffer
        Jackson Hogan

Page 6  Hypothermia
        Witold Kosmala

Page 7  Altitude Sickness
        Witold Kosmala

        Doug Washer

Page 11 Bull-fighter’s Turns
        Witold Kosmala

Page 16 Bellows Turns
        Witold Kosmala

Page 18 Itchy Hats
        Witold Kosmala

Photo on the Summit

This race image of Pinturault Alexis was a contribution to Peak Performance Gazette by HEAD Ski Company.

From the Top

By Witold Kosmala
The Publisher and the Editor of Peak Performance Gazette
PSIA-E Alpine, Level III
Ski Instructor, Coach and Trainer mostly in NC
K2 Ambassador

We are starting the 7th year, this being the 55th issue of Peak Performance Gazette. Can you believe that? I hope you are one of our regular readers. If not, I hope you look up our previous issues and read them as well. Even if you are one of our regulars, you might still wish to reread other articles published by this gazette. I often reread articles myself. They speak to me a different way each time I read them. I reread my own articles as well. Perhaps you might like to look at the ARTICLE INDEX prepared by Gordon Carr. All the great articles are listed there.

To find your copies here are ways to do that. Choose your favorite method.

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• Go to my university webpage www.mathsci.appstate.edu/~wak/. This one is easy for reading on line.
• Go to the ASU Library’s web page at www.library.appstate.edu.

My hopes are that this gazette will serve you as an outstanding reading material if you are at all interested in snow-sports, and in snow skiing in particular. Perhaps these publications will make your passion grow, bring you awareness, improve your technique, and take you on the hill more often.

Take a minute and write me at

Kosmalaw@bellsouth.net
and tell me what you think about this gazette. Perhaps you would like to get involved and share your knowledge with other skiers. Write an article, share a photo, tell us about your unusual or funny experiences, send a donation. I would love to hear from you.

Perhaps you have a new approach to teaching, or a new way to learn? Perhaps you have equipment on which you would like to comment, or a resort that comes to mind? Perhaps you have cross-training ideas, or health suggestions? Maybe training suggestions??? The list of ideas is forever long. Write me. It ALL interests me and our readers.

Skiing is indeed a wonderful sport, but it is also so very difficult. Just think about it. There is nothing easy about it, but everything affects it. It is definitely unique. Read what Jackson Hogan has to say about it on page 5 of this publication.

And, what about coaching this crazy sport? Just think how much trainers, coaches and instructors must know in order to be effective? And how much are they getting paid for their efforts? And how important they are to the ski industry. They can make or break the ski industry. Skiing involves knowledge of

- technique
- equipment
- physics
- biomechanics
- mathematics
- computers
- human anatomy and physiology
- human abilities
- psychology
- effects of fear, stress, color, sleep, nutrition, personal limitations, ....... on humans, on their desires, performance, etc.
- weather
- terrain
- snow
- what might happen when
- risks and their outcomes
- imagery
- training
- people skills
- physical abilities
- human development
- .
- .
- .

Should I go on? This whole gazette could be easily filled. Ski instructors even need to know how to supplement their pay so that they can survive. If their work is seasonal, then what do they do during the off-season? How do they manage to keep up with the ski industry developments and coaching improvements in addition to holding another job?

Even the littlest things, like keeping their “bag of tricks” full, especially if they want to use out of it the most appropriate drill, is difficult. That bag has to be instantly sorted out, so an affective task can instantly be used and demonstrated.

How about a fast example. You happen to get an advanced intermediate skier to teach, who continually has problem with sitting back and with the whole body rotation. Perhaps a one-leg drill is considered for whatever reason. Would you pull out of your beg bellows turns? (See article on page 16.) Probably not, since bellows turns promote whole body rotation, even though they are super for improving stance. Do you have White Pass turns in your bag? Now is a good time to use them. Or, perhaps another simpler one-leg drill? How many do you have available? What if it does not need to be a one-leg drill? What activity would you use in this case to improve both skier’s deficiencies at one time?

Well, I better stop before I empty my beg of tricks right here. I truly hope you will enjoy reading this issue, which will hopefully leave you energized to learn more about our DIFFICULT sport of skiing. I hope you will LIKE us on Facebook. Please, spread a good word about this gazette.
Main Course

Skiers Suffer

By Jackson Hogan, Editor of www.realskiers.com

We endure countless indignities just to engage in the activity that allows us to say the hallowed words, “I’m a skier.” We travel ungodly miles through weather that would force a Sherpa to turn back, discounting the obvious evidence of the treacherous conditions such as fellow travelers on either side of the road shivering alongside their upended vehicles – probably flatlanders out of their element we surmise – all the while proclaiming that the visibility is fine, meaning there’s a small hole the size of a half dollar somewhere on the windshield that hasn’t been totally overwhelmed by the frost on the inside and the frozen gloop outside that rendered the wipers inert 100 miles ago. There is actually a stage beyond this, where the wipers turn into giant claws with stalagmites of congealed snow-mud-salt mixture growing up from them and stalactites of that same impenetrable substance growing down. Grabbing the wipers while driving is good sport for a while, trying to snap the calcifying icicles against the windshield. When this exercise fails one turns to God, Maker of goggles, which the driver then dons, rolls down the window, insinuates head sideways out same and continues on, matters well in hand. (When asked how the drive was, we say, “fine.”)

We haven’t even gotten to the ski area yet. There we will put on shoes the like of which no other sportsmen wear. Let us presume for the moment that they are comfortable, which is as justifiable an assumption as universal peace and harmony among all peoples. The boots are, regardless of comfort, credit-crunchingly expensive (unless they are cheap in which case they are worthless) and they are suitable for no other occasion. Tennis shoes, after all, can be worn for moments other than tennis. (Jerry Seinfeld shot an entire sitcom in them. Try that in ski boots.) To prepare for the trial ahead, we warm up by closing our boots thirty times, each time increasing the pressure, straining to close every buckle until the shell distorts and we declare the job done, meaning no blood can possibly enter or exit the foot for the next six hours.

We open the door to the day lodge, or more accurately, when it is ripped out of our mittens, we are met with winds that would have gotten Magellan around the world in a week. We learn that the Uber-lift isn’t running, something to do with the 6-person chairs being slammed sideways into towers; it’s hard to hear the explanation, due to the wind. Damn this stupid mountain! Anyone can see the weather is fine! Now we’ll have to trudge up Dead Man’s Spine from the top of Blue Rectangle Ridge, which causes us more agita than the exfoliating wind that greets everyone who so much as steps outside.
Who else does this? Recreationally, I mean. Tennis players, up to and including the professional level, act more afraid of rain than the Wicked Witch of the West. Even football players, duly noted for their high pain threshold, stop the game when they can’t see diddle. No one else ventures out into the absurd meteorological events we cherish except maybe tornado chasers. I’ve seen gray-haired skiers, their spines bent from a lifetime of labor, look out into a squall that would rip the moustache off a porn star and declare, “Weather looks fine.”

And the way we test our skills! No other sport parses their milieu with the fine blade wielded by skiers. We test ourselves turning quickly, kinda quickly, not-so-much and not-at-all, plus doing it upside down, backwards and any combination thereof. We do it with feet attached to sliding devices independently or together, which we now call snowboarding. We cook through fall-line bumps that would send an X-Games biker to the clinic and launch airs higher than most experimental rockets fly with nothing more propelling us than our imagination. Oh, and we can soar the distance of several football fields with our head between our feet or run across snow faster than anyone shackled to just shoes and if we’re so equipped, drop down and shoot the eyes out of a an owl. To begin to match this measure of virtuosity, a baseball player – let’s choose Barry Bonds for fun – would have to hold the bat by his butt cheeks and swing at released pigeons.

Compare ski racing, for a moment, to the darling of the televised Olympics, figure skating. Frankly, how figure skating got past county-fair status is beyond me. Aside from sundry efforts at mincing around there is one dish on the menu, a spin, which can be multiplied several times to create the illusion of interest. Shrewdly, the sport’s doyens gave this lone move several different names – axel, flip, toe loop, Salchow, who cares? - to break up the monotony. And boys and girls get to wear one another’s outfits, just like at Androgyny Camp.

Now, ski racing. The slowest event, slalom, is like running through a knife fight, throwing yourself sideways to the pavement with each swoosh of a passing blade and back over to the other side in less than half a second, repeated fifty, sixty times. In alpine racing’s downhill event, boys and girls go so much faster than your family car has ever gone, and they do it over terrain that no vehicle yet invented could descend at any speed. It is, over certain sections, impossible. Television cameras can’t capture the speed and terror because then no one would watch football. The difficulty of this sport can’t be easily conveyed, even by live pictures and sound, because it is unimaginable.

To be fair, every elite athlete suffers and many risk their lives in pursuit of their dreams. What separates skiers from others in this rarified fraternity is the immediacy of the danger; the skier is so exposed. There’s no machinery, no artificial engine of propulsion involved, just planetary forces marshaled by the athlete’s skill, strength and daring. Skiers step into a stream that turns out to be rushing very, very fast, where they discover that still greater speeds are possible if only they have the will to attain them.

This same exploration of the boundary between gravity and nerve is accessible to the recreational skier on every run. The casual observer could be forgiven for not recognizing the connective thread that runs from the extraordinary talents of someone running in the fast seed at Kitzbuhel to the remarkable absence of talent evinced by the “advanced beginner” in a death crouch, knuckles and poles skimming the snow, straight-lining the bunny slope, but it is there in that both are willing themselves to the edge of control, knowing that if they can just manage to keep pressure on the envelope of their ability they will break through to a higher level. What skiing provides for both these exemplars of opposite ends of the skill spectrum and all points in between is the freedom to dare. Nothing holds you back but you. (Well, the “advanced beginner” is most likely heavily handicapped with rental gear of indifferent fit and quality, which will certainly help to magnify the thrill at the expense of control.)

Freedom always has a cost, and for skiers the tariff is often paid in the form of injuries. Some are dramatic, the result of a cataclysmic impact with the planet; others accumulate over time from an ill-absorbed cat track here, a badly managed bump run there, a missed landing now and again. If you give over any part of your life to skiing, you will inevitably learn terms like isolated anterior cruciate tear and laminctomy.

While sprained thumbs and dislocated shoulders are statistical fodder for those who study accidents, skiers tend not to count injuries that don’t disqualify us from skiing. Even injuries that should sideline us often don’t if we don’t let them. I’ve met lots of skiers with no ACL, or no knee cartilage or missing bits due to frostbite and all of them said they felt fine. I most likely encountered most of these skiers on some kind of lift taking us to serious terrain; no matter what parts they might have been missing every nicked one of them was heading back to the top, to heave themselves once again into that wonderful briar patch of variable conditions that prevail at the top of big mountains.

The shallow thinker, discounting all the evidence assembled here, might argue that skiers aren’t ipso facto superior; it’s rather that the sport attracts loonies who ignore most sensory input and have a low survival instinct. This is patently
untrue. Skiers endure despite pain they are all-too-conscious of (once they stop skiing). The consequences of failure always lie just below the surface of any ski day and are occasionally brought vividly to life; they are not so much ignored as respected. We discount the non-debilitating injuries and disregard the sometimes cruel whims of nature because nothing else in our lives can reach so deeply inside us, igniting a pure joy in living in the moment, of relishing the now, now, now of serpentine shifts over the earth’s fluffed-up skin. And if the rest of humanity doesn’t get it that is certainly a pity but at the end of the day, you know what? That’s just fine.

Jackson has played more roles in the ski trade than Eskimos have words for snow:

Si designer, binding and boot product manager, freestyle competitor, retail salesman, lecturer on risk management, ski instructor, marketing director, resort feature writer, ski tester for 25 years and boot tester for 20, OLN and RSN television show host, extreme camp ski coach, Desperate Measures co-creator, 4X Warren Miller screenwriter, R&D chief, honorary Canadian, college racer, 2X personal therapist to Greg Stump, regular contributor to at least ten different ski magazines, and in his guise as Pontiff of Powder, married Paul Hochman and Carrie Sheinberg in all ways but legally.

Jackson is all but universally considered to be the best currently active ski writer.

Hypothermia

By Witold Kosmala
PSIA-E Alpine, Level III
Ski Instructor, Coach and Trainer mostly in NC

In the January issue of Peak Performance, I wrote about avoiding reaching point of no return in the case of losing body heat. A prolonged exposure to cold in which body core temperature drops below normal of 98.6°F can lead to hypothermia. A mild hypothermia is when core temperature is between 89 and 95 degrees Fahrenheit, and can have serious consequences. Lower body temperatures then that, can be fatal. An abnormally low body core temperature can make you sleepy, clumsy and confused. Body temperature loss occurs gradually and affects your thinking, so you might not even realize that you are approaching a danger zone.

What causes hypothermia?

Here are some possible causes of hypothermia.

- **Exposure to cold.** If the body does not have adequate protection against cold, your body might not be able to balance heat production with heat loss. Frostbite might not occur before hypothermia sets in. How fast core body temperature drops depends also on many things, like person’s age, body mass, body fat, overall health, and length of time exposed to overly cold temperatures. Frail older people as well as infants and babies are at higher risk. Lack of food and water speeds up body heat loss.
- **Medical conditions.** People with diabetes, taking certain medication and those with a thyroid condition are susceptible to hypothermia at even milder conditions.
- **Drugs and alcohol** can be a result of premature hypothermia.
- **Mentally ill** people may get hypothermia more readily.
• **Severe trauma** can also cause hypothermia since the brain might not indicate that the body’s temperature actually drops. In fact, I can vouch for that from my own experience. After my almost deadly ski accident, my hospital room was so cold that all visitors had to wear winter coats, while I was still complaining that the room was much too hot.

**How does exposure to cold cause hypothermia?**

In a normal human body, about 90% of the heat escapes through the skin, and the rest through exhalation. The skin loses heat due to radiation. This loss is accelerated if the skin is exposed to wind or moisture. If the body is immersed into cold water, the heat loss is speeded up by about 25 times. One can get hypothermia in their own house, especially when their hair is wet after a shower. It can be serious if that person goes to sleep with wet hair in a cold room, since their heartbeat will also drop.

When body starts to get cold, the brain triggers normally one of the two protective responses:

- shivering, which produces heat through muscle activity.
- temporary narrowing of blood vessels, called vasoconstriction.

**What Are the Symptoms of on-coming Hypothermia?**

- Shivering, which may stop as hypothermia progresses
- Slow, shallow breathing
- Slow brain activity
- Confusion and memory loss
- Drowsiness and fatigue
- Slurred or mumbled speech
- Loss of coordination, fumbling hands, stumbling steps
- A slow and weak pulse
- Cold and bright red skin
- In severe hypothermia, a person may be unconscious without obvious signs of breathing or a pulse

**What is the treatment for hypothermia?**

- Seek medical attention as fast as possible
- Remove any wet clothes, hats, gloves, shoes, and socks.
- Protect the person against wind, drafts, and further heat loss with warm, dry clothes and blankets.
- Move gently to a warm, dry shelter as quickly as possible.
- Begin rewarming the person with extra clothing. Use warm blankets. Other helpful items for warming are: an electric blanket to the torso area and hot packs and heating pad on the torso, armpits, neck, and groin. Possibly, use your own body heat.
- Offer warm liquids, but avoid alcohol and caffeine, which speed up heat loss. Don't try to give fluids to an unconscious person.
- Administer CPR only if a person has no pulse.

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**Altitude Sickness**

*By Witold Kosmala*

*PSIA-E Alpine, Level III*

*Ski Instructor, Coach and Trainer mostly in NC*

Acute (short-term) mountain sickness (AMS) is an elevation illness, also known as altitude sickness, that can affect basically anyone, even the most physically fit people, and it usually happens above 8,000 feet. It is also known as elevation or altitude sickness, with other medical terms. AMS affects people differently. Some are not bothered by it at elevations even as much as 12,000 feet, whereas others are very susceptible to it. If in a group, look out for symptoms in others.
Causes

AMS is caused by reduced air pressure and lower oxygen levels at higher altitudes.

What can trigger AMS?

- Too rapid ascent
- Over-exertion within 24 hrs. of ascent
- Hypothermia
- Anemia
- Inadequate water intake
- Consumption of alcohol
- Lack of acclimatization. This is when body adjusts to increased breathing. It takes some time for kidneys to learn to excrete more bicarbonate into the urine in order to lower blood’s pH level in order to accommodate for extra respiratory efforts.
- Previously suffering from AMS

Symptoms

They depend on an individual as well as the speed of climb and level of exertion. The range is from very mild to deadly. AMS can affect the lungs, heart, nervous system and muscles. Symptoms of mild AMS may include

- Higher pulse
- Shortness of breath when exerting
- Light-headedness
- Dizziness
- Headache
- Fatigue
- Nausea
- Vomiting
- Loss of appetite
- Difficulty sleeping
- Insomnia (or sleeplessness)
- Swelling of extremities

Symptoms of more advanced AMS, can cause the following

1. Shortness of breathe even at rest
2. Gurgling respirations
3. Wet cough (with blood perhaps)
4. Fever
5. Respiratory failure

In even a worse case of altitudes sickness the brain will swell causing lethargy and then coma. If untreated, death is the result.

Treatment

As any illness, it is easier to treat in the early stages. Here are a few things you can do to improve the situation.

Go to a lower elevation as quickly as possible, drink plenty of water, eat more carbs (since they take less oxygen to metabolize), relax and get medical help if needed. This help may consist of:

- more oxygen
- using breathing machine
• medicine to increase blood flow to the lungs
• medication to lower high blood pressure
• medicine to help reduce swelling of the brain.

Prevention

• Move up in elevation gradually.
• Sleep at a lower altitude.
• Drink plenty of fluids (non-alcoholic).
• Avoid alcohol, sleeping pills, and sedatives.
• Increase your intake of carbohydrates, like pasta, rice, potatoes and bread since they take less oxygen to metabolize.
• Ask your doctor about an iron supplement. Anemia lowers the amount of oxygen in your blood. This makes you more likely to have mountain sickness.
• Avoid high altitudes if you have heart or lung disease.
• Take it easy on the first day at higher elevation trips. Stop early when you start to feel fatigue or any prolonged breathlessness.

Movie Review:
“The Man Who Skied Down Everest”

By Doug Washer

During the winter season, I like to re-view some of my ski and snowboard DVD's, which I've collected over the years. The collection is not overly large, but keeps me entertained and helps to get me charged up for some actual skiing or riding at the local slope.

My DVD watching is usually on weekend evenings, and often (this is the weird part) in sub-freezing weather. This is because I watch and listen to my TV from outside on my deck, looking through the sliding glass doors (using small outdoor speakers to provide the sound). I’ll bundle up head to toe, and light up a cigar outside, since my wife doesn’t allow cigars in the house (a rule I agree with, to be sure). It’s just me, the furriest one of my four dogs (Possum), and the frozen, curled up leaves of the backyard Rhododendron. So there I am, watching the snow movie spectacles from Warren Miller, Greg Stump, Teton Gravity Research, PSIA/AASI, and others, while the cold temps give me a “sense-surround” experience, to complement the experience of watching on-snow action.

One of my movie discs had not had any play in several years, and I decided it was time for a re-view a few weeks ago. The title was “The Man Who Skied Down Everest”. Ever heard of it? Yes, it is indeed a (true) story about a man who indeed skied down (much of) Mount Everest.

This film is a documentary, and actually won the Academy Award for Best Documentary Feature, back in 1975. I first viewed it on broadcast TV (maybe it was on HBO) sometime in the late 70’s or early 80’s. It made a huge impression on me, and years later I sought out the purchase of the movie on DVD, once it finally became available.
The story is about a Japanese adventurer named Yuichiro Miura, who assembled an expedition to climb up the majority of Mt. Everest, and then ski down as much as possible, using a drogue parachute to slow his speed, and an oxygen mask to stay alive. The expedition took place in spring of 1970. The subsequent documentary which was released five years later is captivating — to see the planning and preparation, the climb up the mountain, and then the relatively short, almost deadly, descent.

Yuichiro was an extreme skier before the term became popular, many years later. And he also was (is) an overall adventurer and mountain climber. He set the world ski speed record in 1964— at 107 miles per hour. And years later, he climbed to the summit of Mount Everest at 75 years old, and did it again at 80 years old, in 2013. He is the oldest person to have summited the mountain.

There is an emphasis on Zen in preparation for his adventure, and Yuichiro is obviously a very spiritual man. He questions his abilities and his equipment and his team. He prays for advice on how to climb the mountain, how to prepare his equipment, and for strength when the day of descent will arrive.

During the expedition, a giant icefall kills six Sherpa members of the team. It remains one of the worst disasters in Mt. Everest history. The story takes a pause to show the solemn funeral ceremony.

While watching the DVD on my recent viewing, I began to notice, at least to my ear, the English narration sounded weirdly ominous. Then I began to realize that the narrator’s voice also sounded familiar, so I did a Google search to learn that this was the same voice as HAL 9000, the psychotic robot in the all-time great film “2001: A Space Odyssey”, by Stanley Kubrick. Some of the creepier dialogue in movie history in that film: “Open the pod bay doors, HAL” … “I’m afraid I can’t do that, Dave”.

Well… “Descent Day” arrives. And this truly is a great climax to the story. Things start out OK, but after a minute or so, things go from bad to worse quickly. I read in an online article that of the four long-range cameramen, only one was able to keep the camera lens tracking on Yuichiro during most of the descent. And because of the extreme telephoto lens, the movie footage has an “otherworldly” feel to it. I wasn’t sure if Yuichiro had a sound recorder on him—perhaps it was sound effects added later— but you can hear his skis clattering loudly on the steep, icy surface.

I’ll stop here, so it is not going to be necessary to insert a spoiler alert.

You can find some snippets of this film on YouTube, and you can likely download the full movie on Netflix or similar. Or perhaps you might order the DVD somewhere. Check this one out. I really believe the film “holds up well”, and is still very watchable 40 years later.

So, until next time... keep turnin’.

Doug Washer has been skiing for over 50 years, and teaching skiing for over 30 years. He has also been teaching snowboarding for the past 15 years. Doug is certified PSIA Level II and AASI Level I, and 25 year member of PSIA/AASI. He lives in Blowing Rock, NC.
Training

Bull-fighter’s Turns

By Witold Kosmala
PSIA-E Alpine, Level III
Ski Instructor, Coach and Trainer mostly in NC

Bull-fighter’s turn might be known to skiers by perhaps different names, but skiers of all levels find this maneuver extremely useful. Even just portions of this turn can be extremely beneficial. The main part of the maneuver is the bracing on the ski poles.

Just the bracing on the ski poles alone can be used

• in a lift line so you don’t run into a person in front of you
• while waiting for the chairlift chair to come to you from behind since some loading spots have a little slope forward
• when standing on a slope which drops down in front of you and you do not wish to slide forward
• when you wish to back-up a little, then you can push back from this braced position
• when the slope is not too steep, you can brace yourself facing straight down the fall line and wait before deciding to go
• you can use it in a starting gate before your race begins
• you can use it to illustrate a “forward” position on skis. Beware: beginners will exhibit this forward position on an incline until they decide to ski. They normally lift poles out of the snow by tipping back. They bend backward in their back or legs and put pressure on the heels resulting in jetting skis.

The list is absolutely endless. But, as to anything in skiing, there are possible dangers to even this simple idea of bracing on the poles.

• This bracing is NOT a way to stop skiing, only perhaps to stop minimal sliding forward while standing. Beginners want to use poles to stop skiing by poking them into the snow in front of them. Strongly discourage that. Very dangerous.
• Poles suddenly sink deeper into the snow because either baskets are too small or snow is too soft. This can put you in an awkward position to say the least. (See photo of me on the right, right before my poles sunk – no fun.)
• Poles might slip out since the surface is very slick, firm or too steep, or pole tips dull, causing an undesired outcome.
• Poles break. Not good.
The following sequence of photos was taken by BJ Mickel-Close of Beech Mtn, NC. I am demonstrating only half of a bull-fighter’s turn. The first step can be done with either leg. As you view these from left to right, my first move on the second frame is performed with the right leg.
As demonstrated in the above photos, a bull-fighter’s turn incorporates bracing on the poles and stepping your skis in a circular fashion. This is a very useful trick. Here are some benefits.

- Useful to teach beginners so they can face one way or the other across the slope without skiing down.
- It helps beginners in fighting their fears by realizing that they can point their skis straight down the hill and not slide.
- When you stop on an edge of a slope facing wrong way, you can use it to turn around without dropping in elevation.
- Starting by facing straight down the hill makes the first turn easier because it is only actually half a turn and momentum is gained quickly to help out.
- Teaches rotary movements in the legs.

Of course, there are other ways to turn around without dropping elevation. Here are some possibilities.

- Hop 180 degrees
- Lift the downhill leg and rotate it 180 degrees. (Hope you are young and agile.) Then take your uphill leg and rotate to match the downhill ski.
- Face up the hill and use reverse wedge to prevent slipping back. Make few stepping moves to complete a turn.
- More advanced skiers can perform bull-fighter’s turn without actually using poles for bracing, but high edges instead, like in aggressive stem turns.

Difficulties with performing a bull-fighter’s turn can be, but are not limited to, the following.

- Bracing is weak since poles are not extensions of the arms since they are holding poles by their grips. (See photo on the right, also taken by BJ.)
- Bracing is weak since poles are not extensions of the arms if there is a bend in their wrist even though they hold their poles on top of the handles. (See photos on the next page.)
- They make too big steps and have one ski’s tail go on top of the others.
- Step is too big and off to a side and they start skiing away.
- They pick up poles while making a turn, and skis start to slide.
- Their feet are not far enough back from the poles and forces are too high to resist and they start to slide forward.
- Their feet are not far enough back from the poles and tips cannot clear the poles as they are being turned.
- Poles are too close together.
- Poles are not down the fall line from the skier, but off to one side, or even worse – up the hill.
- Skier is standing on their heels and not perpendicular to the slope.

So, go out there and master this task if you haven’t yet. Teach it to the beginners. They will be glad you did.
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Bellows Turns

By Witold Kosmala
PSIA-E Alpine, Level III
Ski Instructor, Coach and Trainer mostly in NC

Versatility in skiing is a must, so every drill is great to be able to do. So, before you go for a certification exam, practice this turn. (See the illustration on the right performed by Konrad Kosmala.) However, many drills carry with them some negative aspects. The same is true with bellows turns.

One-leg drills are outstanding for many reasons, but the main one is that they enhance stance. More, if your stance is poor, then one-leg drills are hard to perform.

As the illustration and photo indicate, the drill shows that:

- basically all of your weight is on the outside ski
- you should be able to pick up the inside ski at any point during a turn
- your inside foot should be tipped as well
- your pressure should be forward as you can see by the tip of the inside ski being on the snow, and not the tail. Look at the clean solid line the tip draws on the snow. If this line is barely visible, then stance is too far back.

Unfortunately, there is a drawback to this exercise. It promotes the whole body rotation and inclination all the way to the end of a turn. In view of this, I do not have my students continue with bellows turns once they get the gist in order not to encourage whole body rotation which would need to be later unlearned.

My brother Andrzej took a picture of me performing bellows turn at Mammoth Mtn. CA. Note how the tip of my right ski is drawing a solid line in the snow while being tipped onto the outside edge. My weight is mostly on the outside ski on the ball of the left foot while comfortably standing perpendicular to the slope.
Turn to Wisdom

- Knowing is not enough, you must apply; willing is not enough, you must do.
- Be more concerned with what God thinks about you than what people think about you.
- Reputation is made in a moment; character is built in a lifetime.

Deep Stuff

You need to wake up every morning and ask yourself: “What should I do today to make this world a better place?”

Thoughts for the Month

- What is the difference between “skill” and “ability?”
- Can you be in the back seat and still pressure your toes down?
- PSIA-E is partitioned into smaller sections called “Regions.” Is this the name used by all other Divisions of PSIA?
- Geographically speaking, do you find anything strange in PSIA-E’s Region 4 versus Region 5?
- What is this drill pictured on the right all about? Which muscles am I exerting? This photo of me (in red boots) with Victoria Wioskowski was taken by Anna Katherine Hartgrove – both ladies of Beech Mt Resort, NC.

Elaborations on last month’s Thoughts for the Month.

**Question.** What is an altitude sickness? (A question from the December issue of Peak Performance.

**Answer.** See article on page 7.

**Question.** What is “hypothermia?”

**Answer.** See article on page 6.
**Question.** Describe what is normally meant by “bellows turns” in alpine skiing.

**Answer.** See article on page 16.

**Question.** Describe what is normally meant by “bull-fighter’s turns” in alpine skiing.

**Answer.** See article on page 11.

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**This and That**

**Benefits of itchy hats, or other reasons for itching head**

There are potentially many reasons why your head may become itchy. For instance:

- your hat makes your head itchy due to your skin’s reaction to fabric
- your hat is loose and slides on your head irritating your skin
- you had a recent haircut
- you have a foreign object under your hat
- excessive heat
- excessive cold
- low humidity in the air
- medicine you are taking
- stress
- dry scalp and other skin issues
- combination of these or other reasons.

But, not all is bad. You can itch your head by rubbing your hat against your head with your hand. This can make things worse, but there can be also a benefit to this. Rubbing your head will stimulate nerve endings in your head making you feel warmer, more relaxed so you can deal better with fear, it can reduce tension headache, improve your reaction time and mental awareness and alertness. It is also good for pain reduction. I don’t think it will make your hair grow out though.

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**The Bottom Line**

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