

# CROSS COUNTRY SKIER

THE JOURNAL OF NORDIC SKIING

DECEMBER 2009 | VOLUME 29, ISSUE 3 [WWW.CROSSCOUNTRYSKIER.COM](http://WWW.CROSSCOUNTRYSKIER.COM)

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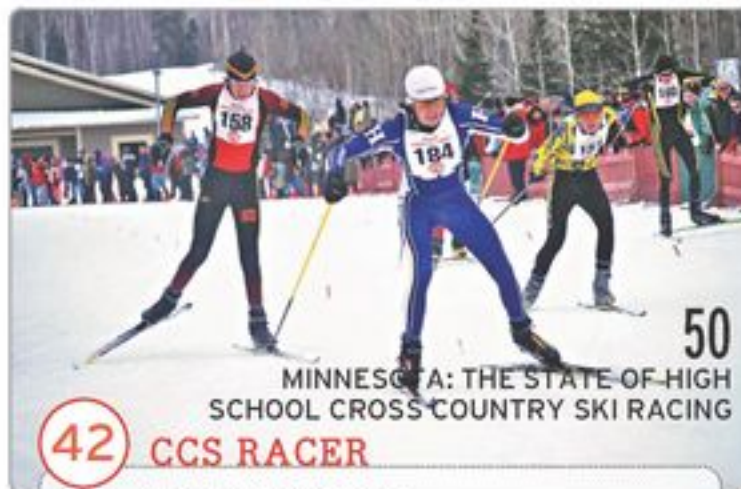


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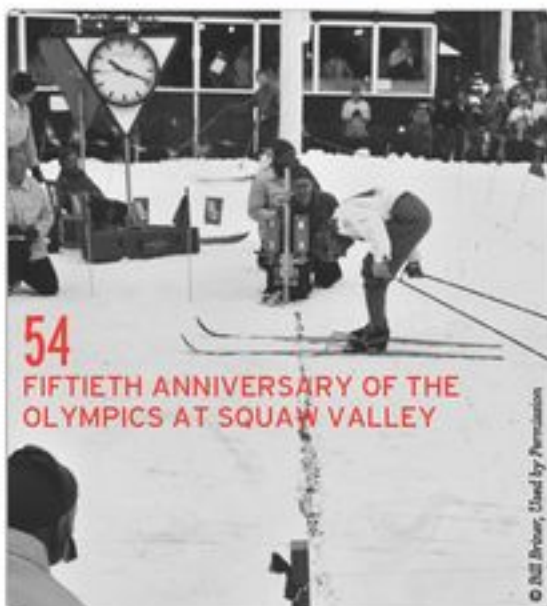
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# Letters



## Biathlon Bounce-back

I have read letters from other subscribers stating a valid point that cross country skiing should maintain some element of fun. Even the most serious competitors will take away the most fond and treasured memories if he or she is going the sport for the right reasons.

Biathlon may be a sport that for many potential prospects seem a bit out of reach because of the complexities and just the nature of the sport. The insurmountable amount of equipment, time and personnel evolved to make it happen can be overwhelming and discourage many from ever getting started.

Although I'm neither a racer nor a biathlon athlete, I've spent some time browsing the Internet only to discover that in some biathlon competitions air rifles are used instead of the 22

caliber rifle and air-rifle targets are manufactured and designed purposely for the function.

It appears logical that what's needed is a downsized version of biathlon to entice the young novice through this type of an introductory class.

A short biathlon course could become an added option to many already established cross country ski centers and resorts.

What biathlon needs in order grow is a more user friendly way from one to get started.

Cross Country Enthusiast,  
**Bill Paul**

Bill,

*You are quite correct in your assertions. Biathlon for young skiers commonly utilizes air rifles shooting shorter distances. It is a good way to teach all the same skills as biathlon using regular equipment and ranges. Simply adding an air-rifle biathlon range to an existing Nordic center would still require a safe and structured environment to work, but it is a good idea. One popular variation of late has been paint ball biathlon, which is a lot of fun and not nearly as complicated. -Ed.*

Regarding the November 2009 issue of Cross Country Skier, on page 51 you state: "Biathlon was a demonstration sport at the Olympic Winter Games in 1924, 1928, 1936 and 1948..."

Not quite...the author is perhaps thinking of military patrol, a team event limited to members of the armed forces, which was part of the Olympic program during these years. Four-man teams in uniform carried firearms and military gear over a 25 - 30 km course, firing at targets (usually one stage) with penalties assessed for misses.

Modern biathlon developed as an 'unmilitarized' version of this event in the aftermath of World War II.

Regards,  
**WD Frank**  
Dept. of History,  
University of Washington  
Seattle, Washington

*Lou Dzierzak responds:*

*Thanks for your note regarding the history of the biathlon event at the Winter Olympics. I used the Whistler Olympic Park website ([www.whistlerolympicpark.com/sports/biathlon/history](http://www.whistlerolympicpark.com/sports/biathlon/history)) as the primary source for the dates biathlon was presented as an Olympic demonstration sport. The Internet is a wonderful starting place for information, but your note reminds me to look deeper into sources and verify the information.*

## The Gift that Keeps on Giving

About a year ago I declined to renew my subscription because I no longer skied very much, but you decided to continue sending me Cross Country Skier, pro bono. I am getting too long in the tooth for performance skiing (or much of performance anything!) and the high-end gear and garb, so I really don't get much use from CCS. However, CCS is a good publication and I have decided to buy gift subscriptions for two younger friends. Please get them in the mail as per instruction on the enclosed cards.

Many thanks,  
**Don Porter**  
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Pay it Forward

# FRESH SNOW

by Ron Bergin

On the wall at our local pizza/beer/wine bar and restaurant, the Rivers Eatery, is a black painted chalkboard titled "Pay It Forward" — a novel system where you can buy a beer or pizza for a friend and they can redeem it when they come in. It started me thinking.

The notion of "paying it forward" has been around since the days of Benjamin Franklin and Ralph Waldo Emerson and more recently was brought to public awareness on the big screen in the 2005 movie "Pay It Forward," based on the Catherine Ryan Hyde book of the same name. It's something to which we in the Nordic ski world, regardless of our specific roles, should pay attention. From the skier on the trail to the local business catering to the ski crowd to the multi-national corporations that comprise the manufacturing side of the business, we must all do something to insure the future of the sport and simply share the passion we feel for the great sport of cross country skiing.

There are many positive programs and initiatives around the country that are doing just this. Examples include the huge NENSA-sponsored Bill Koch Ski League festivals in New England, the 100-plus Nordic Kids program in Hayward, Wisconsin, the exemplary Strider Glider program at Tahoe Cross Country and the incredible school programs of the Maine Winter Sports Center, not to mention dozens of other local clubs and regional organizations. They're all doing their part to further the passion for cross country skiing among our youth.

All of these programs depend on adult volunteers, parents and coaches who generously give of their time. But as some families age and their children move through the system, it's common for parents to also move on. In sparsely populated rural areas, there

*Perhaps it's time we all slowed down, looked around and extended a hand to those who haven't yet discovered the joys of Nordic skiing.*

isn't always someone coming along to take their places. And we can't look to the public schools — steeped in the "if it's not round, it doesn't matter" mentality — to take up the slack. So who's going to do it? The answer has to be: you and me.

*continued on page 93*



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# NORDIC FAMILY

by Heidi Hill

## Games for Good Times and Skill Building

On a trip to Sweden to ski in the Vasaloppet, my husband was impressed to see kids cruising through a slalom obstacle course at the Nordic center in Mora. The kids were divided into two teams, and they raced each other up a hill and then down through the obstacle course. Kids skied around poles, made figure eights, did the limbo, and even skied backwards. They went again and again, getting in interval repeats up the hill with some fun on the way down.

Games are a great way for kids to have fun and build skills without realizing it. Games grab kids' attention, making them eager to complete a relay or get a ball in a goal. Games also encourage quick movements without thought. Kids often get confused or frustrated practicing ski technique through straightforward instruction so games offer them another way to practice skills. Some games require a lot of participants and are better suited for the local ski club or school team, but many work well for families.

With really young kids, like my own, a simple game of chase works well. For little arms, it is often hard to make the physical contact of "tag." With a toddler, I find it easier to run around on my ski boots on the heavily traveled area outside the lodge. For preschoolers and up, it is best to be on skis just like them.

My family uses the widely groomed area outside the Nordic center for lots of play. It is fairly level with just a gentle slope at the far end. We save our playtime for after our ski out on the trails. We're all warmed up and don't have to worry about a little wind or cold fingers and toes. We can play for five minutes or 15 knowing that, when we're done, we can go in the lodge and use the bathroom, sit by the fire or have a snack. Mostly, it's an extension of our formal ski time where the kids can decide what we play. For our younger daughter, now three, it has been her "ski" time after riding in the pulk. Our five year-old loves to put on one of daddy's skis and ride it like a skateboard. She gets a big charge out of it while also practicing balance. Folks nearby always do a double-take seeing the 205-cm ski beneath that little body.

Whether you're playing something simple like chase, or something on a bigger scale like capture the flag, consider the following:

Location, location, location. Flat, open areas work well for youngsters or for games that have a ball that will be rolling. Gently sloping hills are ideal for gliding and climbing games.

Have kids help set up the game, if required, or have one parent chase the kids while the other parent does set-up.

Play for a short amount of time. Usually 10 minutes is good for one game. You want to end with kids wanting to play again, rather than getting tired or bored.

In Bill Koch Youth Ski Leagues, games are an integral part of each ski day. Josh Carlson, who runs the Bill Koch League in Morrisville, Vermont, is prepared to play six different games on a given day. He'll switch games every 10 minutes, or sooner, to keep kids focused and energetic.

One of Carlson's warm-up games is Builders and Bulldozers. To play, set up 10 cones randomly in an area about 30 feet x 60 feet (or use a bigger space for a bigger group). Half the cones are standing, half the cones are knocked down (randomly). Split the group in half and designate one group as builders and the other as bulldozers. The object is for the builders to set up the knocked-down cones and for the bulldozers to knock down the ones standing in a given amount of time (about two minutes).

If you have one child that just isn't interested in the game at the get-go, Carlson suggests that you can have him or her be a timer. After watching the game a bit, your timer might even want to give it a try. To have more options for games, you can increase the number of players by inviting other families along for playtime (and hitting the trails together, too).

Carlson's recommendation for a large group game is Barnyard Bust, a

game that is often played in gym class. To play, first mark out a line where kids will line up. With cones, mark out a small area (barn) about 20 yards away. The bigger the group, the bigger the area. While lined up, have the group pick three or four barnyard animals. Once established, have each child silently pick the animal they want to be.

A parent stands in the area between the line and the coned "barn," which is the "barnyard." The parent says out loud one of the animal names and the kids that chose that animal try to make it to the barn before getting tagged by the parent. When the parent yells "barnyard upset," all the animals go at once and try to make it to the barn without being tagged. "Most of the kids in Morrisville BKL are beginners with no interest in racing and all the kids ski beautifully and best when being chased in a game of tag or Barnyard Bust," says Carlson.

Below is a sampling of games that don't require a lot of kids to play, so they're ideal for families. They are taken from the Bill Koch League Parent/Leader Manual by Dorcas Wonsavage (NENSA, 2005). An updated version is now available and the manual has a variety of games, which are categorized by skills learned and type, such as games for gliding practice or relays. Almost all the games have the benefit of helping kids with balance, agility, coordination and feel for the snow.

#### Red Light/Green Light:

Have the skiers move randomly around you. Then say, "Red light!" Give skiers five seconds to stop and try to hold their position. When you say, "Green light," they can begin moving.

#### Easter Egg Hunt:

Use small candies and scatter them in a field or open woods while skiers are not watching. Younger children start two minutes before older children.

#### Obstacle Course:

Ski over bumps, climb over a bench, ski under a rope, around poles and bushes, sidestep up a ramp or hill. Turn the course into a relay.

#### Double Pole for Distance:

The point is to determine who can travel the farthest with 10 double poles. Establish a starting line and have each skier mark his or her ending place, then try again for personal bests.

#### Grab Snow:

Ski downhill without poles and grab snow with both hands. Throw a snowball at the leader or another target.

Last winter, I watched my husband lead his after-school ski program in a game of speedball. The game has two teams, each going for opposite goals. Participants can stride or skate up to three times before passing the ball. The object is to get the ball to the goal, designated by a couple of discarded coats. Poles are left aside, so kids practice balance. To get around defenders, they swerve and quickly transfer weight from ski to ski. These kids learned that they can play a game on skis much like they do at recess or in gym class and they had a blast.

I notice that my daughters are always making up games in their everyday life. Somewhere along the way to becoming an adult, we no longer have that automatic brain reflex that transforms everything into a game. And when we're on skis, we want to be efficient so we focus on technique. Game time might be just what our technique needs. ☺

*Heidi Hill is the author of "Fit Family: The Infant, Toddler, and Preschool Years" (Vitesse Press, 2008). She lives with her husband, Tom Thurston, and two daughters, ages three and five, in Waterbury, Vermont. The family skis on the trails at Trapp Family Lodge.*

# CROSS COUNTRY SKIER

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## The ACL Injury

# A BODY IN MOTION

by Stacie Grossfeld, M.D.

*I was going down a hill and twisted my knee as I fell. I heard a pop and then had the worse pain I have ever experienced occur in my knee. I could not finish skiing. Within a short period of time my knee became very swollen. I saw my doctor and the diagnosis of an ACL (anterior cruciate ligament) tear was made. Should I have this fixed if I want to return to skiing?*

The ACL is the major ligament in the knee that prevents the shinbone from shifting forward. Without the ACL, the knee will be unstable during twisting, turning or jumping activities and sports. The meniscus, which is the shock absorber of the knee, is at risk of tearing with an unstable knee. If the meniscus is torn, that increases the force on the cartilage that covers the ends of the bones in the knee joint (articular cartilage) and this will, in turn, result in early arthritis of the knee.

The ACL injury is more common in females. The rate of ACL injuries among NCAA women soccer players, for example, is eight times greater than that of men. There are many theories as to why this is so, and a number of factors appear to be in play. A disparity between quadriceps and hamstring strength, neuromuscular control and possibly hormones may each play a role. There is still a significant amount of research needed in this area to determine the cause.

There are several different ways to



reconstruct the ACL. When the ACL tears or becomes disrupted, the ends cannot be sutured back together to repair the ligament. The ligament must be reconstructed.

There are two methods for obtaining grafts for an ACL reconstruction: an autograft (from a patient's own tissue) and an allograft (from tissue gathered from a donor).

The autograft is the recommend graft choice for ACL reconstruction. Typically, autografts will use part of the hamstring tendons (semitendinosis and gracilis tendon), the central one-third of the patella tendon, or the central portion of the quadriceps tendon. There are no major long-lasting differences between these types of autografts.

The other type of grafts are allografts, which come from donors. Allografts commonly use tissue from the anterior tibialis tendon, the Achilles tendon or the central one-third of the patellar tendon.

Autografts have many advantages. There are lower re-rupture rates, when compared to allografts. They incorporate into a new ACL quicker and there is no risk of disease transmission from the donor. The advantages of the allografts are a shorter operating time (by 10 or 15 minutes) and no donor site morbidity.

Many times, associated injuries occur with the ACL tear. For

example, a meniscus is torn about 50 percent of the time and there are almost always bone bruises. The bone bruises can lead to cartilage damage immediately or over time. The MCL (medial collateral ligament), which is another ligament around the knee, can also be torn at the time of the ACL injury. The MCL ligament will typically heal on its own without any surgical intervention.


The ACL reconstruction is performed as an outpatient procedure. The recovery period involves a team approach with the patient, the surgeon and the physical therapist. I always tell my patients I have the easy job. I am in the operating room around 45 minutes to do my job and they have hours of rehab ahead of them.

All parties have to do their part during the surgery and recovery phase or the result will be sub-optimal. Physical therapy starts five days to seven days after the surgery. In PT, the first goal is to achieve full extension. The

*When the ACL tears or becomes disrupted, the ends cannot be sutured back together to repair the ligament. The ligament must be reconstructed.*

PT rehab is fairly intense during the first six weeks and then will transition to primarily a home program.

The athlete is allowed to return to sports after about six months. There is some new data that suggests a benefit in delaying the return to sports to 10 months to 12 months. Before returning to twisting, turning, jumping sports is allowed, a Biodex test is obtained to objectively measure the hamstring and quadriceps strength. There should be no significant deficiency noted. If the hamstring still has some weakness, the ACL may re-tear. If there is a mismatch in strength, more specific rehab will be needed, followed by a repeat test.

There was a time when an ACL tear was a career-ending injury. It is now a season-ending injury. Most people will go back to their pre-injury level of fitness and performance. In fact, cross country skiers routinely return to their competitive or recreational level of performance. 

*Dr. Stacie Grossfield is an orthopaedic surgeon with a specialty in sports medicine. She completed her orthopaedic surgery residency at the University*

*of Minnesota and is in private practice in Louisville, Kentucky where she is the team physician for the University of Louisville Women's soccer team, U of L's Women's Lacrosse Team and the Louisville Ballet along with several other Division 2 and NALA schools. She grew up in Drummond, Wisconsin and learned to cross country ski on the Telemark Trail system. She is an avid cross country skier and she and her family spend most of their vacation time in the Cable, Wisconsin area.*



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# TECHNIQUE & TRAINING

## Late Kick Fix

by Steve Hindman photos by Sue Hindman

What is kick? Getting the ski to stop and grip the snow. This requires the correct ski flex, the right wax and the balance and confidence to move from ski to ski at the right time. The tricky part is the timing, which changes with each stride in response to the snow, the trail and the strength and fitness of the skier. Ineffective timing of the kick is often called a late kick. Here are some typical descriptions.

*"Simple definition: late kick means stepping off your ski too late. A better explanation I use: applying pressure to the front of the ski as you step off of the ski which makes the ski slip backwards."*

— David Lawrence,  
current PSIA Nordic Demo Team member

*"I define a late kick as the skier's center being ahead of the gripping foot when the kick or grip phase begins. The result is a push back instead of a push down to make the ski grip the snow (or the snow grip the wax)."*

— Don Portman, owner/director of the  
Methow Valley Ski School and past PSIA  
Nordic Demo Team member.

Although late kick describes the result of what's happening when you struggle for grip and hear that telltale slap, the cause of the problem is moving to the new ski too late.

### What makes you late

When you slip with properly waxed skis, you are probably doing something to block or disrupt your forward motion onto the next ski. This moves you off your sweet spot — a spot somewhere between your toes and your heel as you weight the ski. When you are over your sweet spot, you can feel the snow and sense where and when to apply pressure through the ski to make it grip.

Describing how to develop this elusive feel and to know exactly when the time is right to start your kick is usually vague and always subjective. To keep it simple, put in some kilometers taking small gliding steps with a focus on shifting onto the next ski sooner with a smooth but complete weight transfer. This will keep you over your sweet spot and allow you to develop your own snow feel. Then you'll be in position to discover for yourself where and when to kick as conditions change.

### A Bent Ankle

Moving onto the next ski with a bent ankle as it swings forward beneath you (see photos 3 and 4) is the easiest way to correct a late kick since it eliminates the main cause — moving to the new ski after it passes beneath you. A bent ankle also helps create an overall forward-from-the ankle lean (photo 1) that turns gravity into an ally and helps you stay light and ski with

Move onto the next ski sooner to stay over your sweet spot and enhance your grip and glide.



less effort. Landing on a straight ankle contributes to being late for the next kick by blocking your glide and forcing you to use strength, time and effort to move up and over your foot before you can move forward.

### Short Step, Long Glide

Many skiers attempt to extend their glide and increase their speed by taking a longer step to lengthen each stride. Although you will go faster when you glide farther in each stride with the same tempo, it is the length of your glide and not the length of your stride that counts. Focusing on a longer stride often leads to a big forward step that disrupts your forward motion, delays your movement onto the next ski and causes you to slip. To correct or prevent over-striding, move to the next ski sooner with a smaller step (photos 3 and 4). Get the new ski in motion early and set it down before it gets out in front of you so you can move onto it with a bent ankle, stay over your sweet spot and glide forward on the new ski (see photo 1) instead of swinging it out in front and then lunging onto it.

### Keep Moving Forward

Once you begin to develop a feel for when and how to make the ski grip with each stride by focusing on small gliding steps, keep your step small but find ways to extend the glide by continuing to move forward on each ski before moving onto the next one.

### Keep the Flywheel Spinning

Pausing to enjoy the thrill of riding a gliding ski (or to deal with balance) disrupts your forward movement and contributes to moving to the next ski too late. Think of getting a flywheel up to speed and then letting it slow way down before doing something to get it going again. While it may be nice to rest while the flywheel spins on its own (and slows down), it takes a lot of energy to get it back up to speed and results in a fast/slow rhythm that's the opposite of the delightful flow that makes classic (and skate) skiing so addictive. Pausing also makes it harder to balance on one ski.

To conserve the energy and momentum of the flywheel, and make it easier to balance on each ski, rely on more frequent (higher tempo) but less intense efforts in each stride. In other words, don't work so hard — you're probably already gliding farther than you thought. Relax and keep moving forward from ski to ski.

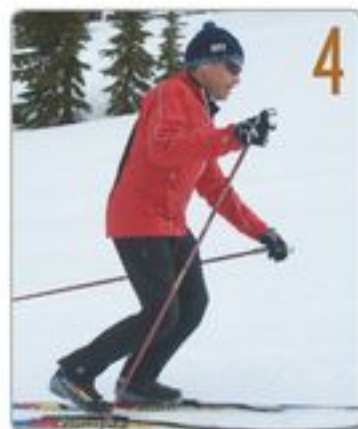
### Find Your Dead Spots

Your dead spots are where you are doing nothing to keep the ski moving. Fill them in with ankle, knee and hip extension; extension forward from the ankles, or something else (photo 5). This will keep you moving forward with each ski, extend your glide, provide something to do instead of trying to balance and set you up to be on time for your next kick. To keep the flywheel spinning, focus on finding and

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*Moving onto the next ski with a straight ankle eliminates your forward lean, blocks your forward movement and puts you behind your new foot.*



*Small gliding steps - Left (new) ski swinging forward prior to moving onto it (Photo 3). Moving onto the new ski as it swings beneath you transfers your weight, speed and momentum to the new ski with minimal disruption (Photo 4).*



*Moving forward on the new ski by extending the ankle, knee and hip.*

# KICK & GLIDE

by Ian Harvey

Many people prefer to skate or stay home rather than classic ski when snow conditions are such that they require klister. I can empathize with this as I remember some episodes when klister dripped onto my old car's upholstery and also when I got klister on my warm-ups a number of times. Sticky stuff that becomes fluid when it warms up in a car can lead to frustrating situations. However, sometimes klister conditions offer bomber kick combined with super-fast skis, which can offer a very fun experience.

Klister is generally required when classic skiing on icy or very wet snow. Basically, when hard wax doesn't work, the change to klister needs to be made unless a person first wants to explore a mechanical grip such as no wax skis or hairies.

Klister comes in a spray or in a tube. Generally the product is much the same. The only difference is that klister in a spray generally has a carrier such as butane that is mixed with the klister. After either letting the klister sit for awhile or working it a bit with a thumb, the butane separates from the klister and is no longer a factor. The main difference between klister spray and klister in a tube is

## Wonderful Klister



how it goes on the ski. Spray klister goes on thin and is not possible to build up on the ski as it comes out as a liquid. Klister in a tube is easier to build up (apply thicker) on the ski base.

After applying the klister to the base, it is best distributed with the palm of the hand or the thumb. Klister generally comes with spreaders or scrapers, but those are best used in removing the klister from the ski and not in distributing it. Using the hand warms the klister making it easier to spread smoothly and to control the thickness.

Generally the klister application should be thinner on the ends of the kick zone and thicker under the foot, especially under the forefoot area. Some conditions, such as very wet new snow, warrant an especially thin application. Ice or wet corn snow requires a thicker application.

Klister application should begin with sanding of the kick zone. Taking this step will give you better kick for longer. Sanding can be done with 100 – 180 grit sandpaper depending on how aggressive the snow is. For the first layer, or binder layer, use a hard klister, which is designed to stay on the ski for a long time. That layer is followed by the klister of the day. A common mistake is to apply the binder layer at home and then — at the venue with very cold conditions — to simply apply the wax of the day over the binder. Sometimes the binder layer freezes and

this prevents the wax of the day from bonding. After a bit of skiing, the wax of the day gets worn off, leaving just the binder layer. The way to prevent this from happening on cold days is to warm the binder layer before applying the klister of the day.

There are hard wax binders, too. Sometimes conditions fall between hard wax and klister. A hard wax doesn't give great kick and perhaps wears off prematurely. A klister is grabby and slow. In these conditions, it works well to use a klister binder covered with the hard wax of the day.

When conditions are mixed — such as icy tracks covered by a skiff of powder or wet corn snow covered by wet powder — a combination of klister and hard wax is usually needed. Apply the klister first. Start with a thin klister binder and cover it with the klister of the day (the klister that you would use were there no fresh snow). Then let the klister cool and harden as much as possible. Cover this klister with a thin layer of the hard wax of the day (the hard wax that you would use if there were only fresh snow).

It is a difficult technique to smooth the hard wax with a cork without breaking open the klister and creating a real mess. The cork needs to have very little pressure against the ski. It should move through the kick zone without stopping. Don't try for a perfect job; just smooth the kick wax out some and call it good. Sometimes it helps to warm the kick wax with a torch or heat gun. Covering a klister with hard wax often speeds up the skis and prevents icing. In very cold conditions, covering a klister with hard wax prevents the klister from freezing and offering no kick.

When skiing on skis that have been waxed with klister, it is important to try to keep off the edges. Techniques such as snow plowing and sliding downhill corners can quickly eradicate klister from the base. After waxing with klister, the wax needs to cool and harden before attempting to ski. It is also important, when standing on klister-waxed skis before starting to ski, to keep the ski bases moving — otherwise they will ice up making skiing difficult.

Removing klister is actually pretty quick and easy. Most of the klister can be removed with a klister scraper or putty knife. The blade needs to have a point (as compared to glide-wax scrapers which have square edges). Then apply GelClean or wax remover to get the rest off. GelClean is the preferable product as it was designed specifically for removing klister. Apply the gel, let it sit for about a minute and then remove it (and the rest of the klister) with fiberlene, base tex, or a rag. ☐

*Ian Harvey is a past U.S. Team member, U.S. National Champion and represented the U.S. in the 1992 Olympics.*

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eliminating the dead spots in your stride by:

- ∴ Taking short steps to create long glides.
- ∴ Making crisp forward movements to maintain your momentum.
- ∴ Moving to the next ski just before the effort noticeably increases.
- ∴ Poling to enhance glide and the leg push, not to push the body onto the next ski.

### Avoid:

- ∴ Taking big steps or strides in an attempt to create long glides.
- ∴ Pushing back instead of moving forward.
- ∴ Passively riding a ski.
- ∴ Digging in and grunting it out (i.e. skiing with pained expressions on the uphill).
- ∴ Relying on the poles to move onto the next ski.

As you take those small steps, find your sweet spot and keep that flywheel spinning, you'll find even more fun and satisfaction in your classic experience. ☐

*Steve Hindman lives and skis in the Pacific Northwest. He is the author of Cross Country Skiing: Building Skills for Fun and Fitness published by The Mountaineers Books.*