

## Letters

### No Specs on Flex

The article “Choices, Choices: A Guide to Today’s Ski Designs” (fall 2009) was interesting and informative, but I wondered why flex was not included in the discussion. Ski tester reviews usually mention flex in the description of how various skis behave, but typically do not include all five design parameters discussed in the article.

Any chance for a follow-up?

— Tom O’Dowd  
Gunstock, NH

*Author Mike Porter responds: Great question, Tom. The main reason I left it out is that flex isn’t something skiers can select as a separate design characteristic. You can no longer select a model of ski, then choose a type of flex for that model. Traditionally flex was a critical design component, but now it is just part of the blend with sidecut, ski width, and type of construction.*

*Manufacturers have a formula for what flex works for a given sidecut and a specific type of construction, so flex really isn’t much of a variable. It has largely been replaced by the type of construction a specific ski model has. A metal laminate construction with vertical sidewalls usually represents the strongest, highest-performance ski with the best edge grip. On the other end of the spectrum is a non-metal ski with a cap construction—which is lighter, easier to ski, and more forgiving, but produces a lower degree of performance. Between these two parameters is a wide range of skis. This is why it is so important to read the manufacturer’s description of the performance target for which they were designing the ski.*

### It’s Lonely Online

P SIA-AASI has nearly 30,000 members . . . and yet we have very little discussion on the Member Forum [available at [www.TheSnowPros.org](http://www.TheSnowPros.org)]. Sure, not everyone is into blogging, chatting online, or even using the Internet for that matter. I’m just thinking that our colleagues must have more questions, opinions, or advice than what the forum currently reflects. I will keep checking

in on the forum and posting questions and opinion. I just hope that some more pros will get online and start using this resource; it can make us better informed and more in touch if nothing else. Who knows, we may even learn more about what we do and how we do it.

— Greg Luce  
Mt. Hood, OR

### Featured Letter Show Me the ‘How’

I have been following “instructional articles” on skiing for a long time, and one characteristic of these articles continues to bother me. Namely, specific movements are advocated (the “what” and “why”), but no specific information is given for how we should use our muscles and body parts to accomplish the movement.

A case in point is “Don’t Be Afraid of Commitment, Just Over-Commitment” (spring 2009). There’s no denying that moving the body’s center of mass (CM) forward and diagonally from the inside of one turn to the inside of the next turn is desirable. This is the “what” of the movement. However, the “how” is relegated to one sentence: “By getting the student to roll the feet, ankles, and knees from old edges to new, the movement basically clears the way for the CM to move diagonally into the new turn.” There is no elaboration of this key statement.

The goal is to change edges effectively and to initiate the new turn without a slight “one-two” stepping movement or rotary movement that will usually destroy a carved turn. There are two ways to accomplish an (almost) simultaneous edge change and start the turn with carving, not skidding, skis: 1) Let gravity and momentum do the work and draw you into the turn and 2) Use the active movement of the feet, ankles, and knees. For a turn to occur and for the skis to continue turning with the body moving in the direction of the turn as a consequence of the ski/snow forces, the muscles of the legs and torso must continue to resist the forces coming from the skis. Muscle action is required to transfer the effect of these forces to the CM to cause it to move in the direction of the turn. To use option 1, simply relaxing the muscles involved will allow the body to move forward (momentum) and downhill (gravity) because you have removed the ski/snow forces acting on the center of mass.

To use option 2, the skier must know where the skis are relative to the CM and how the body is aligned over the skis. In situations of extreme displacement (as seen in any World Cup racer whose legs are almost parallel to the slope in the finishing phase of the turn), the active rolling movement is not (bio)mechanically feasible. The primary supporting edge is that of the downhill ski, which is too far away from the center of mass. For the active movement that involves rolling the knees, the racer first transfers pressure to the uphill ski edge, then rolls the knees to change edges. This movement is usually accompanied by an active extension against the new edges, resulting in a strong movement of the CM forward and diagonally.

For less dynamic situations, it’s feasible to roll the knees without initially transferring pressure to the uphill ski. This rolling of the knees requires a strong lateral component—executed by movement of the femur in the hip socket, while maintaining forward cuff pressure. The downhill knee must move laterally to clear the path for moving the uphill knee.

I am skeptical of the advice to “direct the CM forward and diagonally—not laterally—into the new turn.” What exactly should I do with my body so that this is the result? Is it an active push-off with my feet? Or am I using option 1? Option 2? A combination of 1 and 2? Or is there some other mysterious mechanism at my disposal? The second image of the first series in the article seems to indicate the use of an active push-off with the feet, then letting the body “fall” to the inside. Rolling the knees does not appear to play a major role here since the body is extended prior to edge change.

— Juris Vagners  
Mission Ridge Snow Sports Center  
Wenatchee, WA



What do you think? For a link to this featured letter on the Member Forum, log on to [www.TheSnowPros.org](http://www.TheSnowPros.org) and look for “Web Extras” in the 32 Degrees section.