

Skid with finesse to be fast



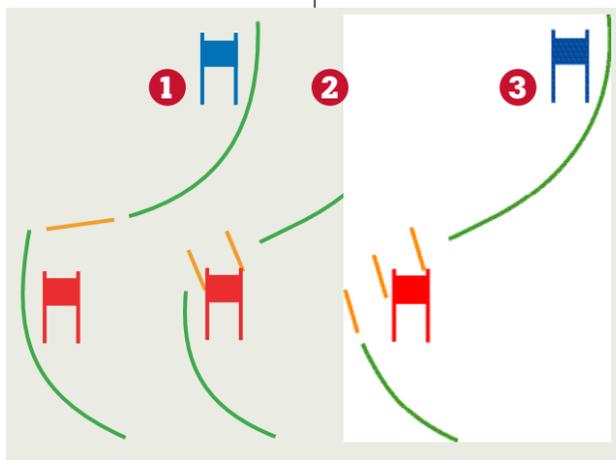
WORLD'S BEST TAKE DIFFERENT APPROACHES TO HITTING THE BRAKES ON COURSE

BY RON LEMASTER

SOMETIMES YOU HAVE to slow down to go fast.

Depending on the set of the course, the pitch of the slope, the hardness of the snow and where your line happens to take you, your best tactic at the next gate may be to exercise some speed control so you can come out on the line that will get you to bottom faster. Giant slalom, in particular, has gotten faster and faster in recent years, leading the best athletes to often trade off perfectly carved arcs for a direct line that gets them quickly from one gate to the next, but requires some braking to come out of the turn in the right spot.

This basic tactic is nothing new. But a variation on it has been appearing more and more over the past few years that has the potential to squeeze a little more time out of a run. We can see it and its more conventional cousin in these photomontages of Ted Ligety and Benni Raich



from the second run of this year's GS in Alta Badia, generally considered to be the toughest giant slalom hill on the World Cup circuit. Ligety won the run.

In these pictures, both skiers are heading for the red gate on a line and at a speed that won't allow them to hold an arc that will bring them out of the turn on the line they want. Rather than try to adjust their line, they pivot their skis sideways to slow to a speed that they can hold in a carving arc that brings them out on their desired line.

There is a difference in their tactics, however. Raich executes a classic steering pivot, or "stivot." He brakes by skidding at the same time as he is turning, then gets his skis carving while they are directed across the fall line.

Ligety has a little different approach: He takes a straighter, steeper line at the red panel. Then, by pivoting his skis almost completely across his direction of travel, he brakes in a straight line. He then straightens his skis back out so they are in the fall line, and carves the rest of his turn from there.

Is Ligety's approach faster? It conforms

to a long-held dictum in automobile and motorcycle racing: If you have to brake for a turn, always do it before you enter the turn, while you're traveling in a straight line. Braking while you're turning reduces your grip, meaning you can't hold as much speed in the turn and are more likely to skid. The same is true in skiing: Dumping speed while you're turning makes it more difficult to finish the turn by carving. This approach also affords him a tighter line than Raich, as evidenced by his position relative to the red panel in the fourth frame. And finally, it allows him to carve down the fall line where Raich is skidding, sending Ligety out of the turn faster.

Figure 1 represents a more conventional tactic for these gates. Figure 2 represents the approach taken by Ligety, and figure 3, Raich's. In all cases the skier exits the turn around the red gate in the same place with the same direction.

The conventional line sets up for the red gate so that the arc will be the tightest the skier can hold at the speed at which he comes out of the turn around the blue gate. The other two lines take the skier to a point above the red gate that requires a tighter arc than the conventional line in order to make the desired exit to the turn. But the skier won't be able to hold this tight an arc because he'd be going even faster than the skier on the conventional line. So in the second and third cases the skier must reduce his speed to the point that he can hold the tighter arc. In Ligety's case, the line out of the blue gate is steeper than Benni's, and the carving starts in the fall line, while Raich's skis are across the fall line when he starts to carve.

U.S. men's slalom and GS coach Greg Needell points out that there is more

technical subtlety to the maneuver in figure 2 than simply pitching your skis sideways: The skier's weight must be on the new outside ski before the skid starts. Otherwise, the he won't be able to redirect the skis on the desired carving line with the correct timing. Needell also points out that by adjusting the ski's angle of attack the athlete can focus pressure on optimum spot of the ski's forebody to get it flexed and arcing in the fall line.

Not everyone uses the same tactic as Ligety, and the frequency of its use varies among those who do. Of the 14 turns on this particular pitch at Alta Badia, he used it twice. Notably, one of them was on a turn that he and Needell both said was one of the key turns on the course: a turn where virtually everyone who was fast exercised deliberate, proactive speed control in order to be fast in the gates that followed.

Ligety believes that people have been doing this since the widespread adoption of shaped skis by racers. Marjan Cernigoj, head coach of the Canadian women's program, said that he first saw it performed by Michael Von Gruenigen in a gold medal-winning performance at the 2001 FIS World Championship GS in St. Anton. If you consider that this was about the time that full-blown shaped skis came into widespread use, their opinions jibe.

So consider this: Now that skis have put carving within the reach of virtually everyone, it's the skier who can also skid with finesse that has the edge on the competition. **SR**

Ron LeMaster is a technical advisor to the U.S. Ski Team and the Vail/Beaver Creek Ski School. Prints of these and other racing photomontages are available at www.ronlemaster.com.



RON LEMASTER (3)