

# The Stem Problem and Vorlage

By Peter Vajda

**T**O STEM or not to stem — that is the question. And certainly it causes a lot of trouble and argument in the ski-ing world. But if we are going to fight about it we must find out just exactly what is meant by stemming. We might begin by telling you something you likely know already, that we get the word stem from the German verb stemmen, which means to brake, or to check.

By keeping one of my skis in the direction in which I have been sliding, and opening the back part of the other ski, always keeping the tips together, I am stemming. You see it is an operation with one ski only. On the other hand the two-sided stem, or you might call it the double stem, that is if I stem with both skis, is called the snowplow.

The snowplow is the best way of braking for the beginner. Even the experienced skier, or the racer may find sometimes on steep, narrow trails or runs that it is his only possible procedure. Naturally, he would not do this often. But the stem is not essentially a way to brake; it is *A Way to Start a Turn*. A safe, easy and exact way it is, too!

For the stem is the best way to make the first part of the christie without exerting any muscle strength. When turning from a running traverse to run in the opposite direction, the first part of this turn involves turning the back



Photo: G. Morris Taylor

Peter Vajda, whose expert coaching is largely responsible for Miss Wepsala's success

parts of the skis uphill. This is very difficult to do while the skis are weighted. Doing a stem-christie, you unweight the upper ski and move it into the new direction by stemming. Then all you have to do is step on the upper ski, weight it firmly and you will find yourself in the "fall-line" without any trouble. The "fall-line" incidentally, is the straight downhill direction, that is, the steepest angle of any given slope.

Getting into the fall-line is much more difficult if you try what is known as a tempo turn. 'Tempo' is the name given to a christie done at high speed with no element of stemming. Now, you cannot turn the back parts of the skis uphill in deep snow without too

much muscular effort. Therefore the thing you must do is lean forward, weight the front parts of the skis, and let them *Turn by Themselves*, (and they will, believe it or not) into the fall-line.

It is obvious that this first part of the turn done this way will become too long and not nearly so exact and controlled as a turn using stem. We have to be exact in a slalom race—that means seconds saved. And that is why every big slalom racer uses stems and stem-christies.

And what about stem-turns? Everybody who does not like to fall, does not want too much speed, and still wants to be able to get

through any kind of snow and slope conditions must be able to do a good stem turn. It is also the safest and fastest way to acquire a good and conscious technique. This is true for the competitor as well as for the beginner.

Vorlage! The magic word, the secret key to good ski-ing! If you fall, if you ski too stiffly, if your skis "chatter," or if your legs get tired too easily—it is lack of "vorlage." But what does this musical German word mean and how can we get this vorlage? When should we use it?

Literally translated, "vorlage" means "forward lean" or "forward position." Technically speaking, it involves getting the centre of gravity of the body *ahead* of the middle of the toe irons of the skis. The skier should always have the sensation that his skis are behind him.

But why do we need to have vorlage? To answer that we must consider separately several of the different elements of ski-ing.

In the first place, we need vorlage in the schuss and in the fall-line part of a turn. In schussing, if the centre of gravity is behind the middle point of the ski, any acceleration of the ski (such as would be caused by change of snow or increase in angle of the slope) will tend to throw your body still further backward. Then you will have the feeling that the skis are running away from you. Naturally you try to keep up to the skis by pulling with the leg muscles. If your legs are strong enough you will succeed, but you will soon tire. If your legs are not strong enough you will fall backwards.

On the other hand, if you have enough vorlage—that is, if your body is far enough ahead of your toe irons—any acceleration of the skis is automatically transferred to your body by a pushing stress through the legs. This gives you no chance of falling and does not tire the leg muscles. By exactly the same reasoning, vorlage is needed in the fall-line part of a turn.

If, in a schuss, we expect to suddenly encounter slow snow, such as we would get on coming out of the shadow into the sun, we allow for it by putting one foot a little ahead of the other and holding the leg straight. Very little weight is placed on this forward foot, and you still should have vorlage in respect to the back or weighted ski. The forward leg takes care of any push coming from that direction which will be caused by the sudden slowing down of the ski.

In traverse running, or coming out of a turn, vorlage is also necessary. If you are leaning backward, the back part of your skis will be weighted. The tips will be unweighted and pointing uphill. The force of gravity and the force of the turn both tend to throw the skis downhill. Thus the points cannot go the way they are pointed; they merely slide sideways

across the slope. This causes uncertain traverse running, and very bad sideslip in the turns—a fatal thing in a slalom race.

If you have vorlage, the weighted front part of the skis will be pointing downhill. Thus in this case, they will be able to go ahead in the direction in which they are pointing. By leaning away from the slope and weighting the outside ski you will counteract the force which tends to pull you downhill by means of a pushing stress in the legs. This presses your skis *to* the slope, giving them more friction and safer, smoother running. Obviously this is very important on icy slopes.

On bumpy slopes it is important to have the right kind of forward lean for there are two ways in which we can get the centre of gravity of the body ahead of the middle of the skis. One way is with straight legs, leaning the upper part of the body forward from the hips. This is the position assumed by nearly all beginners if they are not instructed otherwise. The other position is with the knees bent and both knees and hips forward.

If you are running in the first position, any disturbing force on the skis will cause you to fall because the stiff knees cannot counteract the effect of the jolt. In the second case the bent, forward knees act as a spring. When a disturbing force acts on the skis the knees merely bend more and the rest of the body is not affected.

Now that we know what vorlage is and why it is so necessary, the question is just how we can get it.

In the first place, I should say that perfect vorlage is almost impossible to attain; very few skiers in the world having been able to really get it, but everybody can get some, and the more the better. We should practise by pushing the knees and hips forward as far as possible while keeping the feet flat on the ground. This should be practised regularly at home for at least three months in order to loosen up the knees and hips sufficiently.

The fact that you can bend your knees and push your hips forward does not mean you have vorlage. Those things are necessary, but they are not everything. You still have to be able to do it on skis. You still have to get that feeling of having the skis behind you and that takes plenty of courage the first few times, as well as lots of practice.

Vorlage is a thing that every beginner should try to get and every racer should try to keep. Even the best racer will find that he loses it during the summer. I admit that it is quite possible to ski without it, for approximately 95 per cent of all skiers in the world ski without it. But the man who gets it is automatically in a higher class.

Ski-ing is lots of fun, but ski-ing with vorlage—that's the "tops!"