

Speed Race Prep

By Dave Peszek

This is the tenth in a series of technical articles that will appear this season in Ski Racing. Each issue, we'll tackle different topics that arise for skiers & riders of all types. The author will attempt to answer any tech questions that you may have – Pez@holmenkol.us.

After two long weeks away at industry trade shows, I returned home and headed off to an Eastern Cup FIS speed series in Sugarloaf, ME. The series was men & women, and consisted of two DH's & a SG on a well prepared course, familiar to many of our readers.

I've had a few readers request a complete run-down of what happens to make a ski "race ready", so I'll tackle it here. But first, a few thoughts to remember: there is more than 1 way to get to the same result, and the real race is usually always won by the fastest skier that day!

The first two training days offered warm, sunny speed training – not much different than a great day in Colorado, except this was northern Maine. The result was a track that packed down and hardened up nicely when the inevitable deep freeze rolled back in, along with 75mph summits winds and occasional snow squalls. The course offered a relatively mild start, allowing the athletes build into a nice turning rhythm before being sent in the steeper headwall section, then exiting at their greatest speed into the more mild lower section, followed by about 20 seconds of basically flat running before the finish. In all, about 1:16 for the women, 1:13 for the men. Although a challenging downhill, the winner would clearly be the one who skied the upper turns the cleanest, and was able to carry the most speed into the lower gliding sections and hold on till the finish. It was a classic recipe requiring a good skier and good skis.

The skis came off the hill about 2pm on Wednesday, and went immediately into a heated garage to be separated and wiped down. As I waited for the skis to warm, I went online to check the www.NOAA.gov site for weather info and compare it to the snow & air data that I gathered at race time that day. There was a big weather change rolling in – the only question was how cold, how soon, and how much wind.

The skis had been raced on that day, so some mild edge work was in order. Since the weather was due to change (becoming drastically colder), I was betting that the humidity in the snow (mid) & air (high) would combine with falling air temps to "lock up" the snow. I wanted to be sure that the skis were a little sharper, and also highly polished. This took about 15 minutes for the pair. Since the course had quite a bit of gliding sections in the flats, I didn't want the widest part of the outside edges causing any speed loss, so I softened up the outside "corners" about 4-6 inches with a gummi block. Because the skis had been properly prepared at the start of their life, I didn't need to do any sidewall work – they were as smooth as the paint on a Ferrari. Next, a simple hot scrape cleaning was in order to be sure the skis were not holding any dirt (they were, due to warmer snow earlier in the week).

After hot scrape cleaning, some good brushing was in order. Using a stiff steel brush, then brass, I brushed the skis until they looked like they could be raced on. Then, using a sharp scraper, I began to scrape the skis down several times to remove the wax that the brushes brought up. Back to the steel, then brass brush again, and finally fiber fleece to remove the dust before base waxing.

The purpose of "base waxing" or wax layering is to give the wax above something to stick to, and also to give you a final, last layer of wax for the athlete to run on when all else is worn away (should the snow be that abrasive). I chose a simple hydrocarbon base wax for this purpose. After waxing, I immediately scrape the edges, tail cap, tip insert, and clean the sidewalls while the wax is still warm. Next, it was off to dinner!

Taking a long break for dinner gives you one last chance to re-think your final wax layer, as well as allowing the base wax to set up properly. I used this chance to check the weather service yet again and discovered that the forecast lows and highs had been moved down by another (projected) 5C. Outside, the wind was howling already.

The snow that day was extremely small grained, fine, old round snow; it was tightly packed, but also had a little bit of fresh, fine, sharp snow mixed in from the squalls. There were sections of the course that had classic eastern "ice", really just tightly packed super humid old snow. In speed events, if one is to err to one side or another on the hardness of wax, it is generally always best to err to the warm side. The combination of two aggressive snow types mixed together, plus dropping temps, made me choose a wax that was exactly for the temp range of snow I expected – around -14C to -10C (exactly what we got, top to bottom).

Next up was the scraping and brushing of the base wax. At this point, it is easy to feel like you are home free, but you are not. If the base wax is not scraped and brushed very thoroughly, the skis can be slow the next day. I use an extremely sharp scraper and "peel" the wax down (not ripping). Your wax scraper should be as sharp as your edges. Then, I work through a complete range of hand brushes, again starting with the stiff steel. Once done, I begin to re-scrape the ski, and go back to the stiff brass and work thru the range (stiffest to softest) again. Give yourself at least 30 minutes per pair for this step. Dust the skis again with fiber fleece, then apply your race wax. After you have scraped the edges, tips, tails, and cleaned the sidewalls, you are done for the night!

Up at 6am, heading back to the garage, the weather forecast and my assumptions were correct. The wind is howling off the peak, it is mostly sunny and clear, the air temp is -20C, and the snow has dried out and locked up. It looks like a great day to race! I spend another hour scraping and brushing the skis completely, and then secure them for transport, and head to the hill. Because the snow temp & air temp are so low, I know that all the brushing I have done while the skis is warm will need to be done again once the skis get cold.

At the start, I check the snow temp, -16C with about an hour to go before the race. The humidity is high (85%), the wind is blowing, and athletes and coaches are beginning to congregate at the start. The excitement is building, but there is still work to be done. Most simply lay their skis out, confident that their brushing inside has done the trick. I don't leave it to chance – the low temps mean that any wax "hanging" from the base will be like an anchor to the athlete. I re-brush using a very soft steel brush (what I call a "cold start brush") then a horsehair brush for about 10 minutes total. Next, I choose a block overlay for the cold snow, crayon it on, smooth it out with felt, & then brush out for about 3 minutes using horsehair. I always check that I have brushed the overlay out enough by "smearing" my thumb across the wax – if there is a smear mark created, I know I need to brush more! The start is within minutes, and the skis are carried to the wand.

One final dusting from tip to tail with fiber fleece, put the athlete in the bindings, wipe the edges free of any ice, clean the top sheets for vanity, and she is away. A little over a minute later, she has won the race and all the hard work has paid off. The prize – the best homemade cookies you can imagine!

Total time invested (speed skis) – around 3 hours from beginning to end. For tech events, plan on about 1 to 1 ½ hours total time invested. The key isn't just the time invested, but breaking it up into three chunks – after training, after dinner, and early am. This format always yields the best results. Making your speed skis fast is just like skiing – intense focus on the fundamentals will yield the best results!

Good luck at the races!

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