Ski Tuning Basics

Ben Tindal

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Ski Tuning Basics:

Skis need to be tuned. Ease of turn initiation, holding line on firm snow and finally, speed are all positively impacted with well-tuned skis: base grind, edge angles, edge finish, and wax.

This primer assumes you want to get this right, and understand that the better you can prepare your skis, the better your skis will turn and glide.

Assumptions for proceeding with this tuning outline:

- Bases are flat; tip to tail, edge to edge – stone ground/cup ring ground
- Bases are saturated with warm wax – red or yellow

BaseWork

1. Edge to edge is from Stone Grinder – this also imparts very important grind patterns and recesses edge from base
2. Tip to tail is from Cup Ring Grinder – this is done first, and is most reliable method of base flattening – removing cupping and, depending on brand of ski, some life too.
3. Cup Ring Grinding should be only for strongest, most competitive skiers as it sets base bevel at 0 degrees. Then edge bevel can be set by hand.
4. Grind patterns are under-utilized. As snow changes from new, sharp, low humidity to old, round, high humidity, the grind change is as important as wax adjustment.
5. New grinds are being developed and tested regularly. Check with a coach or with your shop to determine if they are using the very latest race grinds.

EdgeWork

1. Understand that degree of edge bevel is changed by degree of base bevel *and* side edge bevel.
2. A 1 degree base with a 2 degree side is a net 1 degree bevel. This is an easy to maintain, reproduce-able effort.
3. Polishing of edges: Initial edge bevel is set with files. After attaining desired angle, use same tool with diamond stones to progressively polish edge to greater hardness/higher polish. This will make damage to edge more difficult, and improve glide.
4. The courses and conditions encountered by these PA racers can be challenging on ill prepared skis. The difference, however, between our tougher days, and the average day on WC courses are not comparable. Very high bevels are not necessary, and add difficulty to consistent preparation.

Wax

1. Saturate with multiple coats of warm good quality wax
2. Cleaning and pulling 'hair.'
    a. Cleaning is best accomplished with warm wax scraped warm to pull impurities from base
    b. Pulling 'hairs,' or fibres exposed above base is best accomplished with cold wax scraped cold.
3. Use of CH-3 on bases near edges. Powdered hard waxes are easiest to add without difficult scraping. Sprinkle powder 1-2 cm from edges on base and iron in. Brush and add warm wax. This will help prevent base burn on high friction areas.
4. Hard waxes can be more easily applied and scraped by powder-izing on cheese grater. Also, use of fiberlene paper while ironing will pull excess wax, reducing need for more difficult cold scraping before brushing
5. Fluorinated waxes are expensive, but not always better. Fluorination is most effective at or around freezing temp. Recommendation is to

use LF-7 or 8, CH 4(powdered or fibre-lened) Ch6-8. SVST makes a great rub on for second runs which is reliable in more conditions…nailing the wax is great, but odds are generally low. There are apps that assist in selection. This is science and art; knowing the mountain, the trail, the snow condition, the humidity, and where on course wax will be most critical aid in wax selection.

6. Humidity. If cloud cover is high night before race, assume warmer, fluoro wax for day. If night is clear, use colder, CH wax. Clouds add humidity, and clear pulls it.

Overview

1. Reproduce-able and easy to maintain are good things.
2. The hard work should be done once, pre-season, and from there maintenance will be frequent and much easier.
3. Polishing edges, de-burring and wax saturation is daily work.
4. Skis will be more reliable on any condition, amplifying physical efforts.
5. High edge bevels and lots of expensive wax are great for WC and for big money results….for JR racing they are not as reliable, not as easy to maintain, and can, in fact be detrimental.
6. Reproduce-able and easy to maintain is a good thing.

Next:

- Waxing in depth
- Weather and Humidity
- Snow analysis
- Grind appropriateness
- 2nd Run prep
- tuning at hotels and away