Caldwell Sport Specialties Inc

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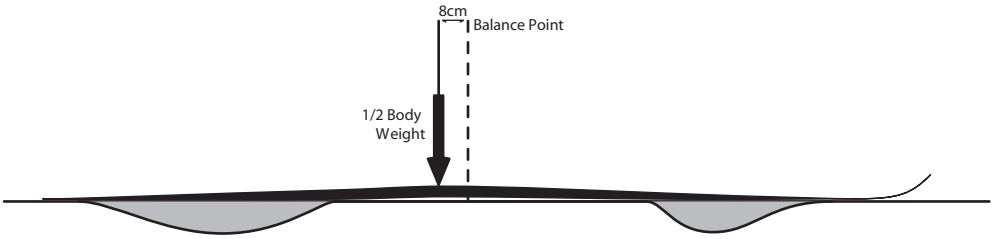
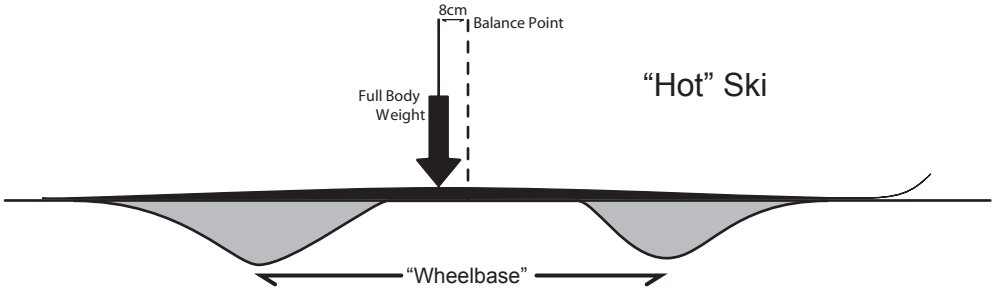
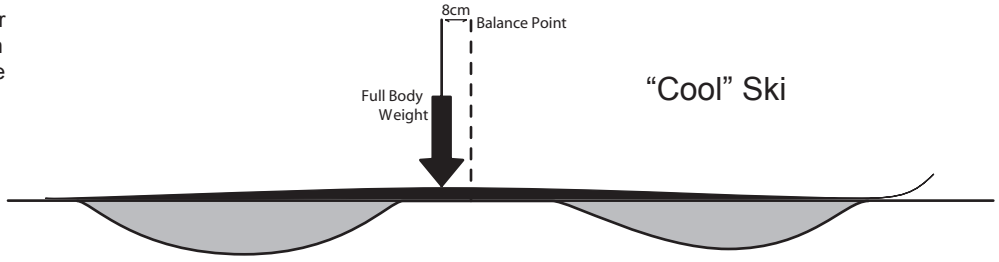
At half weight a well fit skating ski should have significant residual camber. The actual camber height will vary depending on the make and model of the ski. Appropriate values may range from slightly over 1mm (for a Fischer skatecut) to over 4mm for a Rossignol. Within a given model a higher half-weight camber suggests a more lively bridge (the part of the ski that spreads your weight toward the tip and tail of the ski). It may also suggest a longer bridge, and therefor a longer “wheelbase”. However, none of these qualities can be fully descirbed until full-weight measurements are made.



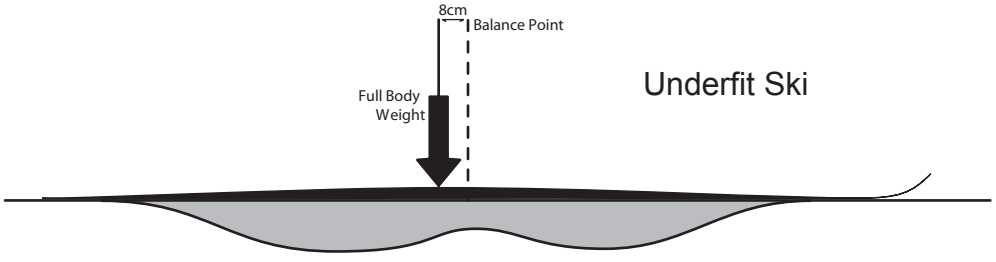
With full weight on the ski the true character of the ski emerges. Residual camber heights at full weight also vary according to make and model. They may be as low as 0.15-0.2mm, or as high as 1+mm. The difference between the half weight camber and the full weight camber quantifies the activity of the bridge as the ski is loaded and unloaded. A lower camber height differential suggests a “flatter” and “deader” feeling ski, but is often quite stable and secure. A higher camber height differential suggest a more lively feeling ski.



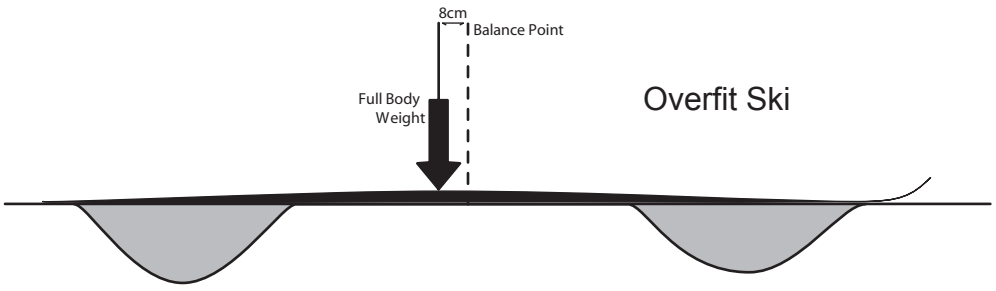
Even with full weight applied to the ski all skate skis should distribute the body weight fore and aft. This results in higher pressure zones in the front and rear portions of the ski. The distance between these high pressure zones is considered the “wheelbase” of the ski. A long wheelbase tends to yield better tracking and stability while a shorter wheel base coupled with a softer tip can be very fast and supple.



The shape of the pressure distribution at full weight also plays a large role in determining the performance characteristics of a ski. We describe a ski with concentrated and “deep” pressure zones as a “hot” ski. Less concentrated a shallower pressure zones are characteristics of a “cool” ski. Cool skis tend to have low static friction due to the lower peak pressure on the snow. This means a ski that is “slippery” when you first put it on the snow, and at low speed when the static component of the combined frictional forces is the greatest factor. A hotter ski will have higher static friction, but will release to kinetic frictional forces sooner due to the higher peak pressure at the hot-spots. A hotter ski is also likely to have a high-end acceleration on fast downhills.



All skate skis need to distribute the weight of the skier fore and aft in order to be satisfactory. A ski that bottoms-out under full-weight is considered “underfit”. This ski may have very low static friction and good half-weight glide characteristics, but is likely to be quite unstable, and will not be satisfactory at full weight or at any level of over-load.



An overfit ski is also problematic. Depending on the make and model, an overfit ski may put too much pressure on the tip, causing the ski to plow. It may have an exceptionally long wheelbase which will feel very clunky as it releases from the snow in motion. An most importantly, the bridge is likely to be too active at full weight, such that the camber deflects a great-deal at overload. This ski is likely to be an energy drain for most skiers.