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The Development of Downhill Ski Boots and Bindings

Downhill skiing is one of my favorite things to do in the winter and spring. When I was little I used to be fearless going down hills (which didn't always end well for me). One time in fifth grade I was practicing my no turn method on the black diamonds and suddenly found myself tumbling down hill while my skis stayed behind me. While I was lucky and only ended with a little break in my wrist, it could have been much worse if my bindings hadn't ejected me and my boots weren't strong enough to protect my ankles. This got me thinking about how ski boots and bindings have developed overtime to create a safer experience for skiers.

When downhill skiing was first becoming popular, people just used their everyday work boots. This worked due to the fact that bindings were just leather straps. As skiing became more developed and popular, companies started producing ski boots. The article *The Short Colorful History of Ski Boots* states that in the 1900's the first ski boots started to appear in sports catalogs. Around this time ski boots just looked like normal work boots with big square toes. This allowed the skier to wear multiple layers of socks for warmth. Over time, ski bindings started to develop more causing the designs and structures of boots to change. In the 1950's ski boots evolved from one boot for cross country and downhill skiing, to two separate boots with different designs and structures. During this time downhill ski boots were starting to stiffen up and take the structure of what current ski boots look like. These stiffer ski boots were only

available to professional skiers or the very wealthy that could afford them. I interviewed Tom Gerstenberger, who was the downhill ski coach in Ashland as well as a ski instructor in Edgar, about how ski equipment has evolved since he first started skiing. During this interview he said when he first began skiing in the 50's he used regular work boots also. This shows that commercial use of the harder ski boots was not around at this time. In the 60's everything about boots started to change. The first buckles started appearing, along with hard plastic casings. This allowed for more proper ankle support. Another benefit of the hard plastic was that skiers could lean into edges more when taking turns, allowing for quicker runs down the hill. Today's ski boot manufacturers have now learned from past techniques to create an advanced boot containing a hard plastic shell, along with a soft liner and insole, all held together by heavy duty buckles. This boot provides the proper support and comfort every skier needs to have a great day on the slopes.

Modern day ski bindings are designed to release the boot when a certain amount of force and pressure are applied to the bindings. They are designed this way to prevent leg injuries. Before bindings began to evolve, skiers would use leather straps to keep their boots secure. In my interview with Tom Gerstenberger he stated that his first pair of skis would attach to his boots by leather straps. Everytime that he fell his skis would stay on him, putting him at great risk to break a leg. As more skiers started to sustain leg injuries, engineers started to come up with ways to create better bindings. According to the article *Release! History of Safety Bindings*, the first binding was designed as a pivoting clip that would attach to the toe of the boot. When the boot was in a steady place with constant pressure it would stay latched, but when there was a

shift in pressure such as someone leaning forward a lot, the clip would swing sideways, releasing the boot. This binding never got popular with skiers due to the limited testing they did with it. This led to the development of release systems, which is very similar to what today's bindings are modeled after. Sturdier plates were installed to the toe of the boot and to the bottom of the binding. The boot was held in place by bindings in the toe and heel area for extra support. Release systems were then developed which allowed for the boot to come free when certain force and pressure were applied.

Ski boots and bindings have both changed greatly since they were first developed. The evolution of each of these items has led to less accidents, especially lower leg fractures. Thanks to the engineers and passionate skiers before us, we can now enjoy hitting the slopes with less worry about hitting the ground!

References

A Short, Colorful History of Ski Boots. (October 1, 2016). Retrieved from

<https://www.skiinghistory.org/news/short-colorful-history-ski-boots>

Release! History of Safety Bindings. (September, 2202). Retrieved from

<https://www.skiinghistory.org/history/release-history-safety-bindings>

Interview with Tom Gerstenberger on February 20, 2021