

## THE SELF SAFTY TEST FOR SKIERS

### **A simple procedure that could be performed daily by every skier.....**

This page describes a simple procedure that every skier should be encouraged to perform at the start of every day's skiing. The purpose of the self test is to ensure that the skier can release him or herself from their ski bindings at the start of a day's skiing. Using the self test has been shown to reduce the incidence of knee injuries by between 15-25%. About 15% of all alpine ski injuries are related to malfunction of the binding system - i.e. the binding does not release when the skier might expect that it would.

Several factors all interact to ensure that your ski bindings work as well as possible. The three most important are:

1. The age and general condition of the binding
2. The condition of the ski boot sole and wearing the correct boot size
3. The setting applied at the toe and heel of the binding

Other factors (such as a skier's weight) that are used to determine binding settings can also vary from day to day - a skier's exact weight for example will depend (amongst other things) on the clothes they are wearing, how many beers they had the previous evening, and how many times that holiday they have chosen the cheese fondue.....

#### **The condition of the ski binding**

Ski bindings are mechanical devices. No electronics are involved in the release function of any ski binding currently on the market. This is why it is so important that bindings are serviced regularly to ensure that all these internal fittings are working as well as the manufacturer intended them too. Many people pay no attention to their bindings once they have bought them and yet drive several hours to a ski area with their skis on a roof rack exposed to the weather, salt, grit and dirt. No wonder then that a binding subjected to this sort of treatment is less likely to work efficiently. For a very comprehensive overview of bindings in general, including when to consider changing them, have a look at [this page](#) from one of the gurus of ski bindings - Carl Ettlinger in Vermont.

#### **The condition of the ski sole and wearing the correct boot size**

When we talk about bindings, what we are really referring to is the "boot-binding interface" - i.e. the ski boot and the binding working together. A binding works by sensing the forces transmitted to it - forces transmitted from the skier's leg by the boot. If the boot and binding do not work together as well as intended, then again the binding is less likely to release when it should. There are two main problems that affect how well the boot and binding work together -

1. The condition of the boot sole and
2. The correct boot size

To keep your ski boot sole in good condition, take care to minimise the amount of time you spend walking on the sole of the boot - whenever possible, change out of your ski boots as soon as possible into a different type of footwear. Not surprisingly, older boots are more prone to the sole wearing down so be prepared to buy a new pair if this happens to your boots. With regard to boot size - this is mainly a problem at rental shops. You're given a pair of boots and they're too small - which means their painful to wear. So you're given a bigger boot - sometimes too big a boot but you don't like to complain and anyway it feels pretty ok-ish and certainly not painful so you take them. But if your boots are too big for you then again they will not transmit force information to the binding as well as a correctly sized pair of boots will and again you put yourself at risk.

## **The setting applied at the toe and heel of the binding**

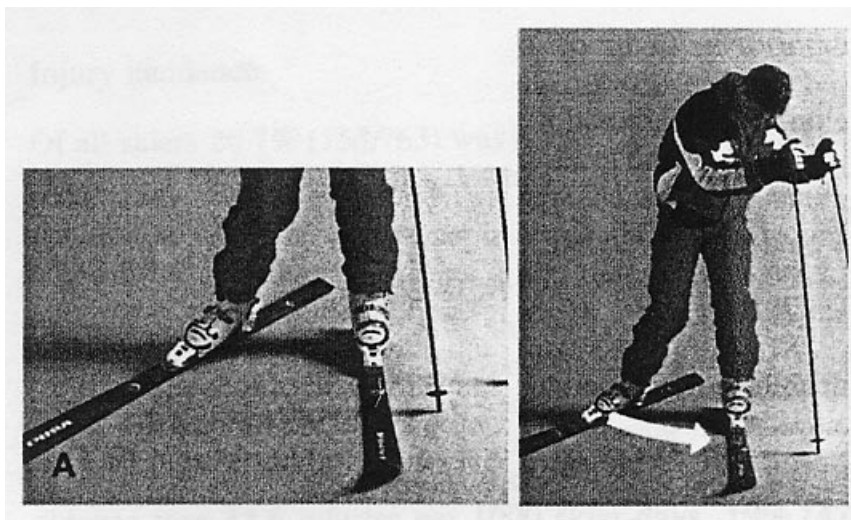
It is obviously of crucial importance that the settings on the toe and heel pieces of your bindings are correct. They should initially be set by a qualified ski technician using an accepted international standard (such as ISO or AFNOR). Remember though that binding settings are based on the wider population and cannot be absolutely specific for an individual who's exact needs change all the time depending on factors such as muscle strength, fatigue etc.

With all these different variables all coming into play, its not surprising that in over 60% of accidents when the ski binding might be expected to release, it doesn't. Injury - usually to the knee - is the common result. This is where the self test comes in.

## **The self test**

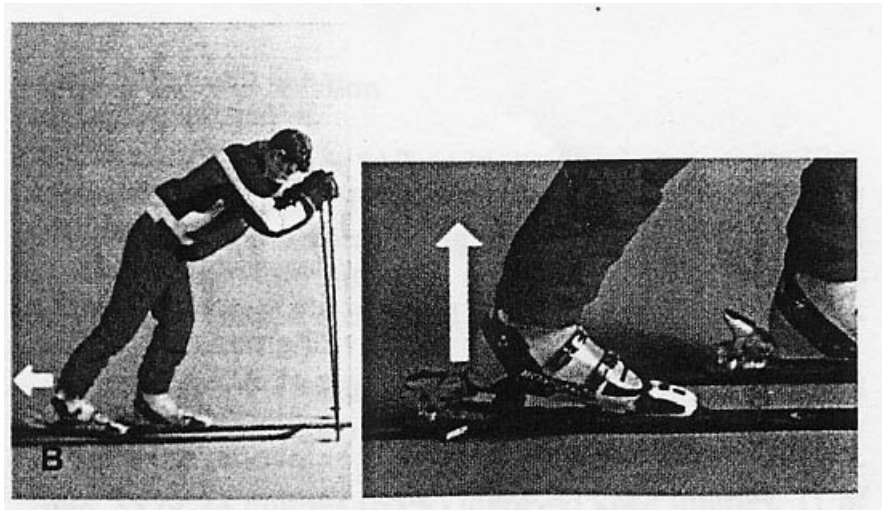
The only safe and proven way to ensure that your bindings are set correctly for you as an individual is to get into the habit of performing a self-test on your binding every day. It could well help keep your knees in good shape for many seasons to come. As I have already mentioned, it has been demonstrated by several research groups to reduce the risk of knee injuries by up to 25%. The test itself is very simple and usually takes less than a minute or two to perform, especially if you are performing it regularly. The basis of the test is your ability to release yourself from your bindings at both the toe piece and heel.

### **Testing your toe piece setting**



With your ski angled so that the front inside edge is on the ground, try and twist your boot inwards so that the toe should twist out of the front of the binding. Apply the force gradually – you should not have to use excessive force.

### Testing your heel piece setting



With your ski flat on the ground, slide your foot back until your leg is out straight. Now try and lift the heel of your boot out of the binding. Don't use too much force - you'll strain a muscle or possibly even rupture your Achilles tendon if you're too vigorous!

## Adjusting your bindings

If you can't release either the heel or the toe from the binding, then reduce the binding setting by 0.5 and try the release procedure again. You can do this using a variety of tools - many can be found at ski areas in self-help maintenance areas or else ask a ski patroller. Keep reducing the binding setting like this until you can release your boot yourself at both the heel and the toe. One might need more adjustment than the other. Before you ask, there is no evidence that the self-test – when applied correctly - makes your binding too slack and liable to inadvertent release. At the end of each day, if you have changed your settings then re-set your bindings back to their original settings ready for the next day and your next self test!

So if you don't already, get into the habit of performing a self-test daily if you can – even weekly is better than nothing and may prevent you adding to the statistics.

## An important caveat with modern bindings

One important caveat that I have recently been made aware of by some of my binding manufacturer friends is that some modern ski bindings are no longer easily amenable to adjustment by a lay person. Some models now need specialist tools in order to adjust the binding setting and on many modern bindings the degree of movement needed to adjust the binding by 0.5 of a setting is so miniscule that it is only within the realm of a ski technician to do it accurately.

So if you have bought your ski bindings since 2010, you should check with your local ski shop/technician to ascertain whether you are able to adjust the bindings settings easily yourself. If not, then although you may be able to check if your bindings do release, you yourself will not be able to adjust the binding setting as described above.